# HISTORY OF GREEK PHILOSOPHY

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## THALES TO DEMOCRITUS

BY

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## DEDICATION

To my friends, my former pupils, who inspired this book by their difficulties and questions, and who will find in it little or nothing that I did not tell them.

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# PREFACE

To add another to the numerous histories of Greek Philosophy available in English may seem uncalled for and imprudent, if not downright impertinent. The books already at hand are excellent, and, it would appear, sufficient. The more detailed and critical are standard and exhaustive works of reference and of advanced instruction; the shorter and the more concise serve to aid and refresh the memory, or to give an accurate small scale map, easily readable to the practised or interested eye. But the fact remains that however invaluable they may be to one already familiar with the subject, or born with a natural bent for it and therefore quick to understand its problems and tolerate its terminology, they prove too learned, too technical, or too bloodless and in the nature of a text-book, for the use and pleasure of the "general reader." They are apt to give merely the plan without the panorama which infuses it with color and shape and animation. Or else they confuse the untrained observer with the spectacle of the novelty, the wealth, the tropical luxuriance of a vast and incredible landscape teeming with the strange forms of a monstrous fauna and flora, in which everything familiar seems turned topsy-turvy. And in either case they assume, deliberately or unconsciously, a previous knowledge of philosophy, or an already awakened flair for philosophic imaginings and speculations such as shall prepare the reader to follow with sympathy and understanding minute and elaborate discussions, or at least enable him to make the often over-dry bones of rapid and highly condensed accounts live.

For example, many American university curricula are faced with the problem of acquainting, wholesale and in the brief term of a semester, large numbers of innocent and incurious

youths with what every young man should know about the history of Greek Philosophy. And this problem, hard at the best, is not a little aggravated, so far as my experience, which I fancy to be fairly typical, goes, by the difficulty of finding any book sufficiently untechnical and vivid to supplement the teacher's lectures and arouse the understanding and the interest of his pupils. Again, one is frequently not a little embarrassed and at a loss for an answer, when indiscreet friends among "the general public" come with a modest disclaimer of any knowledge of philosophy save a certainty that it is "beyond them," and ask for the name of some work which may instruct them without too greatly straining their limited powers of comprehension.

In the present volume I have tried to meet this want so far as the early Greek philosophers are concerned, and to get under way with a simple, painless, and, I hope, not unentertaining history of Greek Philosophy as a whole. I am encouraged to this attempt by my own feeling that philosophy is not really the impossibly abstract, abstruse, cold, and difficult thing of the popular imagination, but rather something essentially warm, close, nay, clinging to everyday life, highly colored, melodramatic, and naturally provocative and engrossing. And with this feeling goes the opinion that its history is the story of perhaps the most exciting and sensational pursuit with which the human mind has diverted as well as ennobled itself. If I shall have succeeded in insinuating that philosophy is not so dull and respectable after all, and in troubling the reader, however vaguely, with something of its fascination, I shall feel that I have done what—apart from amusing myself—I set out to do.

This volume is based upon other histories, and so far as I know, there is nothing original in it. The sources have been before me, but I have tried to rely entirely upon the interpretation of them given by such historians as, for instance, Zeller, Gomperz, and Professor Burnet. I do not see that at the present time anything new can be said, except by experts, and it has been my aim merely to rehash in a lighter and more easily digested form what they have already thrashed out and pre-

pared. Where divergencies of opinion and interpretation exist, they have been noted, but no side has been taken. Furthermore, I have wished to be quite unpartisan. Being devoid of any "system," or even strong conviction—save, perhaps, that the growth of philosophic speculation, as well as the evolution of the Universe and the course of human events, is without culmination—my mental furniture lacks that Procrustean bed of a fixed point of rest and reference upon which the history of philosophy is sometimes stretched. I have no child or even pet view of my own, for which to seek forerunners in the wilderness among the ancients. At the same time, it has not been my intention to take a severely objective and impartial attitude. I have sought rather to be thoroughly partial to each new system, to imagine myself the disciple, not the critic, of the successive philosophers with whom I have dealt, to make all their ideas as plausible as I can, and in general to say as much good and as little ill as possible about everybody and everything.

Two bibliographies have been appended, dealing respectively with Greek Religion and Early Greek Philosophy, as well as a chronological table, which may be useful for framing philosophical, with their setting of historical, events. The bibliographies make no pretence at being complete. They include only such books as I myself happen to have found useful, and betray, if anything, the limitations of my library.

Practically all the translations, and the major part of the interpretation, have been taken from Professor Burnet's "Early Greek Philosophy," and his "Greek Philosophy Part I. Thales to Plato." My thanks are due to the publishers for having in my absence kindly reviewed the translations taken from "Early Greek Philosophy" and verified them in accordance with the third edition (1920). I am indebted to many friends for reading parts of the manuscript, and among them particularly to Professors J. H. Woods and R. B. Perry of Harvard University, who have made many helpful suggestions; also to Mr. E. A. Mowrer, Roman correspondent of the *Chicago Daily News*, to Mrs. Mowrer, and to Mr. A. L. de Bosis, for the time and trouble that they have so generously given to reading the

proofs. The portion of Chapter II dealing with the Eleusinian and Orphic Mysteries has already appeared, with some alterations, in the *Hibbert Journal* for October, 1922, and I must acknowledge the kindness of the Editor, Dr. Jacks, in allowing me to republish it.

B. A. G. F.

Rome, April, 1923.

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## CHAPTER I

## WHAT IS PHILOSOPHY?

THERE are few of us who, at one time or another, have not found ourselves speculating about the character and daily existence of some chance individual seated opposite us in a tram or railway car, and making up some story about him to fit and explain his looks and behavior. It may be merely the natural curiosity about other people's business with which we are all endowed, that attracts and holds our attention, or it may be something odd and interesting in our subject's appearance that puzzles and challenges us. But whatever the grounds of our interest, they are apt to impel us to construct deliberately or insensibly—especially if the journey be long and tedious, and we lack other means of entertainment—a picture of what this odd, or charming, or commonplace individual is really like.

It is obvious, however, that the trend of our questions will be determined not by the look of our hero alone. Our own personal interests and the impossibility of studying every side of his character in the brief course of our journey will have much to do with determining and limiting the nature of our speculations. Still, if we confine our interest and investigation either by instinct or by choice, we shall be obliged to admit that our point of view is only partial, that our hero possesses other sides to his character—other selves, we might say—than the particular self with which we were dealing. But these other sides or selves also are equally part of him, and inasmuch as they are also expressions of what we might call his central

or total personality, they have equally to be taken into account in making a true and inclusive picture or story of his total life and character.

Now we are all of us seated for a journey that sometimes lasts for many years opposite a fellow-traveler towards whom we cannot feel, or even pretend to feel, indifference. We are strapped into our seats, and we cannot turn our heads away, but must perforce stare at him all our life long, and only death can free us from the otherwise unescapable fact of his presence. And that presence is all-engrossing. We would not keep our eyes off him if we could, so strange, so self-contradictory, so baffling, and so full of challenge are his appearance and behavior. His expression is ever changing—now kindly, now cruel, now sad, now gay, now full of encouragement, now of menace, and now again of a great and weary indifference. This strange Being, in those moments of almost personal contact when he returns our fascinated stare, and meets our eye with something of intelligence or friendliness or hostility in his face, we call Life spelled with a capital L. In his more impersonal phases of unresponsiveness and aloofness, when we feel less on Christian-name terms with him, we are apt to call him the World, or the Universe, or Reality, or on even very correct and formal occasions, the Absolute.

We can no more escape an interest in the nature of this Universe or Reality with which we are surrounded and confronted at every turn, than we can the fact of its presence. There is in the first place the blank surprise produced by the mere fact of finding one's self alive and tête-à-tête with a World. Through wondering, says Aristotle, men began in the beginning, and, we might add, begin to-day, to philosophize. But this round-eyed wonder speedily turns into a keen-eyed and sophisticated curiosity. The Universe is not only astonishing, it is perplexing. It puzzles and intrigues us. We begin to suspect that it is not altogether what it seems. It may have private affairs. It may lead a double life, the life of what it appears to be in public and the life of what it really is in private. At the mention of a double life we are naturally all agog, and begin to philosophize spontaneously. As we begin

to pry into the affairs of the Universe, we find our suspicions confirmed. Its affairs are more private and more difficult to get at than we had supposed. Idle speculation and gossip will get us nowhere. The behavior and appearance of the World present a problem, a riddle, and perhaps a case for the police. It is more and more obvious that there is a mystery, and that the Universe does not wear its heart on its sleeve. Behind the Universe as it appears in public there is the Universe at home—an inner nature and constitution of things which, if only we could penetrate to it, might be found to explain all the various and apparently conflicting activities and aims which confuse and complicate the surface of the World.

In this standing invitation to discover what the inner life of the Universe is like lies a perpetual challenge to the amateur detective that lives and moves and has its being in every one of us. Idle curiosity is reinforced by the no less primeval passion for hunting down a quarry. We are not only prying into the private affairs of a very mysterious and extraordinary Being, we are also stalking a prey. But once off on the scent, we find that we are embarked on an adventure the difficulty and wildness of which is beyond that of any big game or man hunt ever undertaken by a Roosevelt or a Sherlock Holmes. No wild beast, no criminal in fact or fiction, not even Arsène Lupin himself, ever displayed half the genius for covering his tracks and setting false trails, and escaping just at the moment when finally the net seemed closing—nay closed—about him, as does the true character of the Universe in eluding our pursuit. Just when we think that at last we have grasped it, it slips through our fingers. However careful and complete our story or theory is, some fact has escaped or contradicts it. But humanity takes up the repeated challenge, laying its plans each time more carefully, and spreading its nets more and more widely and with finer meshes. Hence the fact that philosophy has a history, and on the whole progresses.

It is, however, not merely for the sake of entertainment, and for the mere fun of turning someone else's private life into a public scandal, or of doing amateur detective work, that we find ourselves speculating about the hidden nature of the

World. That desire to know, with which Aristotle said all men were endowed by nature, has also a sound practical basis. We are not only spectators of our world but actors in it. And the way in which we act is a matter of life and death to us. The Universe is not only a tough-looking, but a tough-acting, customer. We have to be continually on our guard against it, and the length of time for which we can successfully maintain that guard is dependent upon our ability to foresee what the World will do next. This ability, again, varies in proportion to the correctness of our guess as to what the character and motives of the World—what its machinery or its psychology, we might almost say—are really like.

Huxley has likened this relation of man to the World to that of a chess-player pitted against an unseen opponent. This opponent will beat us all in the end, to be sure, but by skilful play some of us can postpone the inevitable for some three score and ten or four score years. Meantime our antagonist plays fair and according to fixed rules. He never overlooks or fails to take advantage of an error on our part, but on the other hand he never fails to recognize and accept a check. The success with which we delay defeat is measured by our understanding of his game, for that understanding gives us an insight into what probably will be his next move, and thus puts us in a position to forestall or counteract it.

Knowledge then is not merely enjoyable and exciting; it is useful. It is power, as Bacon said, because through understanding Nature we are able to overcome her, in part through obedience to her ways when and where they cannot be changed, in part through the deliberate exploitation of her forces and the turning of them to our service and advantage. "To submit to fate and serve God is to rule." *(Fato obedire, Deo servire, regnare est.)* These lines, scratched on the walls of a cell in the Tower of London, suffice to set forth a whole philosophy of Life. To realize the limitations of one's own nature and of the nature of things of which one is a part, and within these limitations to seek to make the Good sovereign and the Ideal real, are the conditions of human dignity and of our mastery of the world. But to know God from Fate, to distinguish that

which is perforce unalterable from that which perhaps may be changed and bettered and recast in the image of the divine, is at the same time the most useful and the most philosophic of all knowledge.

We are now ready, I think, to answer the question which forms the title of this chapter. Philosophy is inquiry into the real nature of the Universe in which we live. It is merely an extension of natural curiosity from other people's private affairs to other things' private affairs, and to the private affairs of this lump sum of all people and all things, which we call the World. We know more or less what Reality looks like and how it behaves in public. But what is it like at home? Under the third degree? To its valet? Philosophers, then, are essentially busybodies and detectives, but on a large scale and with the grand manner. Their problem is to find out the truth, if they can, about the totality of existence. They ransack all space and all time for their evidence. But at the same time they can leave nothing untouched in their search. Every feature and movement of the World is a clue. They must scrutinize every past and passing event. Nothing can be a matter of indifference to them, if they are to frame with any measure of success a theory which will fit and explain all the facts in this immensely complicated and mysterious Case, which the existence and nature of the Universe present.

A philosophic system, then, is simply the story made up by the philosopher to account for the looks and behavior of this strange Being, the World, with which he finds himself confronted. Of our friend in the tram-car we might seek corroboration of our speculations concerning him, if we were impertinent to the point of asking him outright. But there is no such short-cut to knowledge of the truth about the Universe. The Universe is deaf and dumb, or else reticent enough to pass for such. It reveals to us directly nothing of its inward self. It has nothing to say in response to our attempted interviews. It neither affirms nor denies the correctness of our guesses. No confession of its real character can be wrung from it. All the evidence a philosopher has for writing up his story is circumstantial. The only clue to what the nature of things is

really like is to be found in their appearance. And, to change the figure slightly, the verification of the correctness of our conclusion as to the true inwardness of the behavior of the Universe does not mean that Reality has finally owned up to feeling as from its behavior we suspected it did, but simply that it has gone on exhibiting without contra-indication the same symptoms upon which our diagnosis was originally founded.

But our diagnosis, of course, may be and is simply one of many. Doctors of medicine may, doctors of philosophy do, disagree, and compared with the disagreements of the philosophers over the real, inner condition of Reality, the differences of physicians in consultation over an interesting and baffling case are a chorus of unanimity. So far as the philosophic problem is concerned, everybody is entitled to his guess. There is no authority, no court of final appeal, no expert opinion even, to give a decision to which the inquiring mind must bow. At the same time this liberty is not license. We must not guess merely at random. Our opinions must be dictated not by our fancies or hopes, but by the facts of the case. Here lies the World before us, and the question is not what theory regarding it is prettiest and nicest and most edifying, but rather what theory about the nature of things best fits their actual look and behavior. Everybody then is bound to give reasons for his guess, and to show if he can that his particular guess is more in accord with the evidence than any other.

The absence of eye-witnesses to the private life of the Universe imposes upon philosophers a peculiar carefulness in their research. At every step their results have to be checked up by the data provided by the actions and appearance of the World, and conformed to them, lest what aims at being a plausible theory and explanation deteriorate into unfounded gossip or even out and out libel based upon personal prejudice. We might liken the philosopher in this respect to the artist who in painting the picture of a landscape has to keep raising his eyes from his canvas to his subject, in order to be sure that he is catching the spirit of the landscape as it is, and not substituting a sketch of objects and values composed as he would prefer

them. Or again we may liken him to the scientist whose suppositions or hypotheses regarding the constitution of the physical world must never for an instant lose touch with the phenomena upon which they are based. The moment that a scientific theory ignores any fact within its sphere, it is in danger; the moment that any fact declines to fit it, it is doomed. In the same way, if the philosopher, who, as Plato says, has to be the spectator of all time and existence, fails to note any aspect or action of the World, his system is inadequate; if he will not bring it into conformity with events, it is untenable.

Indeed, the method and the tests employed by philosophy should differ in no wise from those of science. A philosophy is an interpretation of the Universe based upon existence as we find it, and maintains its validity so long, and in so far, as it keeps itself fitted to the facts and events which go to make up the phenomenal world. But the scope of philosophy is wider than that of a science. It will be remembered that in speaking of our fellow-traveler in the tram-car we pointed out that our speculations regarding him might perhaps be restricted to some one particular side of his character in which we happened to be specially interested, or, on the other hand, might deal with the whole man. Now, in the same way, the scientist is one who devotes himself to the study of a single aspect of the Universe. As things stand, the World happens to present a number of sides which can be investigated comparatively independently of one another. We can, for example, more or less isolate the physical or material side of the Universe, and study it. And this aspect of things we may again subdivide, and study in detail, making it the object of such semi-independent spheres of research as physics, chemistry, mechanics, astronomy, geology, and the like. Or again we may investigate the activities of living matter, without for the moment bothering with physics and mechanics or even chemistry, and by subdividing our subject separate the provinces of the various biological sciences from one another. Or yet again we may turn the microscope upon our own inner experience, and inquire as mere psychologists into the nature and behavior of consciousness, without concerning ourselves with biological sciences

or chemistry. We may even within the field of consciousness confine ourselves to a particular problem such as that presented by the fact that consciousness among other things displays preferences, likes this, and dislikes that, pursues what it likes, avoids what it dislikes, and in general makes the distinction between good and evil, creates values, and conducts itself accordingly. Then our interest is that of the moralist or student of ethics, in determining what the human Good really is, and what kind of conduct is best calculated to realize it. We may, however, not bother about the question of moral values, but turn our attention simply to the study of the behavior of our mind when it is in the process of what we call thinking or reasoning, and attempt to make out a description of what that process is like. In that case we have decided to restrict ourselves to logic, and to leave ethical questions to others. If, however, we persist in being interested in and speculating about the nature of the whole World, of which these various aspects and sides are parts and manifestations, and in making up a story or theory about its character which will include and explain *all* the manifold activities and characteristics which it presents to us, we are then philosophers, rather than physicists or chemists or psychologists or logicians.

Of course no scientist, and for that matter no one whosoever, can wholly avoid this central philosophic question. The various aspects of the World treated by the scientists cannot, since they are parts of one whole, be wholly isolated from one another. Sooner or later investigation of any one of them will confront us with problems the solution of which has to be sought beyond its borders. For instance, the psychologist in the end can scarcely evade the question of the relation of the mind to the body, and generally of consciousness to matter. Some people, indeed, think that the problem of consciousness can be immensely simplified if only its behavior can be dealt with in the same terms as simplify and render intelligible the behavior of the physical world; that is, if only we can reduce it to a form of mechanical energy. In the same way the biologist cannot well avoid the subject of chemistry. It is an open question whether or no life can be understood in terms

of chemical activity; that is, whether biology is not just a branch of chemistry. Similarly a study of chemistry in the end tends to involve questions which the physicist has made his special province. Chemists ask themselves whether the differences and relations between the various chemical elements are not capable of further reduction—of being detected and caught in the act, as it were, of being after all only different groupings, in this or that geometrical relation, of qualitatively similar atoms or electrons or ions, or whatever the ultimate unit of matter may be.

If we could carry out this particular series of reductions, we should of course immensely simplify our world. Its whole behavior could then be expressed in the comparatively uncomplicated formulæ which describe the behavior of matter in motion. But this reduction is far from being attained, and even if it were, our troubles would not be over. For physics itself takes certain facts such as space and time and motion pretty much for granted, and does not bother to analyze them. And it has been held that these aspects of the World are not really founded in the outside Universe at all, but are merely our ways of perceiving things—forms of the activity of our consciousness like our senses, which alter and change the real nature of the outside world, as colored glasses alter for the eye the real colors of a landscape. In fact, it has even been held that the whole so-called physical and material aspect of the World can be understood in terms of consciousness. After all, what are time and space but ways in which we experience? We get our perceptions one after another, or we get several presented side by side, and we call this sequence and coexistence; which are universal characteristics of our presentations, time and space. Furthermore what is the material world but just a lump sum of sensations and experiences of different sorts? Try to get outside the World as it is given to your senses and your thoughts. Try to get outside your experience. It is like trying to get out of your own skin. You can get more experience—have more *in* your consciousness—just as you can expand your skin and grow fat. But although your periphery may be extended in either case, you are still shut up within the

vicious circle, mental or physical. Therefore, some philosophers argue, the least common denominator of the sum total of existence which we are seeking is to be found in terms of consciousness. And so we find ourselves back again precisely where we started.

I have mentioned these different arguments and points of view simply to show how quickly all our questionings, even the most simple, land us on difficult and debatable ground. Philosophy is sometimes reproached with being remote from life, but in reality nothing is closer and more intimately interwoven with everyday existence. To ask the simplest or the most trivial question about anything, is to set on foot an inquiry into the nature of the World. To indulge in an instant of reflection is to embark on a train of thought whose ultimate destination is a philosophic system. The fall of an apple in an orchard seems a homely and simple enough occurrence, yet Newton found himself unable to deal with it satisfactorily till, after long research and meditation, he had formulated the law of gravitation. But even Newton got out at a way-station, so to speak. For the law of gravitation itself suggests many further problems. What is the scope of the law? What warrant have we for supposing that it applies everywhere, that it always has applied, that it always will apply? How do we know—for that matter, do we know, that there may not be vast tracts of space where bodies do not attract each other in direct proportion to their masses and in inverse ratio to the square of their distances, but rather according to some quite different formula, or perhaps not at all? Anyway, why should the formula remain the same even for us in the future, or why should we not believe that bodies may altogether outgrow their present habit of attracting each other? Is the law of gravitation, when all is said and done, more than a mere snap-shot of the way in which bodies happen to be behaving at the present time? Can it be said in any way to prescribe, or more than provisionally and roughly to describe, how they shall behave? And what of all the other laws and concepts with which the sciences have familiarized us? What ground, if any, have we for supposing that they hold good for all space and all time? Thus it is only

a step, under modern conditions of mental transportation, from the apple to the Absolute.

We, of course, habitually get off the train of thought much further down the line than Newton did. The apple falls, we say, because it is heavy, and we stop there. And in general we are quite willing to be put off by rough and ready answers, and to direct our lives by rule of thumb. The answers pass and the rules work because, if we take the trouble to investigate them, we find that they are based eventually on theories regarding the real nature of things which nothing has happened as yet seriously to contradict.

The debatable ground to which all questioning and all science finally leads is the sphere of metaphysics. When the different sciences have finished their tasks and handed their results in, we find that we are still unable to understand how those various aspects of the World of which they have treated are related to one another and to the Whole of which they are part, or to estimate the final significance and position in the character of the Universe of such things as space, and time, and matter, and motion, and life, and consciousness, and thinking, and valuing, and pursuing ends and ideals. It is the business of metaphysics to deal in surmises as to the answers to such questions, to frame a theory, as it were, which shall wholly cover our opposite neighbor in the tram-car and show how his many sides—his profession, his hobbies and amusements, his home-life and all—either hang together and make up a consistent character, or pull apart and leave him a multiple and disrupted personality, as the case may be.

There may arise at this point a misunderstanding against which we must guard ourselves. It might appear from what we have said that metaphysics, or, for that matter, philosophy, is a kind of afterthought invoked to supplement and bind together the results of the investigations made by the separate sciences. We get as far as we can, it might seem, in physics and chemistry and biology and psychology, and then being unable to proceed further, we make conjectures as to whether and where and how the various lines of investigation might plausibly meet. But such a view is really a reversal of the

procedure both of the individual mind and of the history of philosophy. The primitive wonder of the individual or the race face to face with the Universe expresses itself in questions and speculations of the most comprehensive sort. What is it made of? What is its meaning? What is its general attitude toward ourselves? Later, as we gather in more data and notice that they fall into more or less definite and separable groups, investigation becomes specialized. Finally, the different aspects and activities of the World become distinct, and speculation in various fields begins to result in theories where fidelity to the facts within their province is comparatively complete, exact, and tested by time and by the occurrence of the new data which time brings with it. Thus it is that the individual sciences begin to grow within the more general philosophic point of view and interest and eventually to detach themselves from it.

The sciences, then, are not the source but the offspring of philosophic speculation. Even the most full-grown and independent of them show unmistakably the mark of their origin. The motives which actuate them are the same motives as actuate the philosophical interest, their method is the method of philosophy, their subject-matter its subject-matter, their questions are metaphysical questions cut short, as it were. But whereas in them the all-impelling curiosity is chastened and restrained, in philosophy it still has the courage and the freshness to survey and challenge the nature of things in its entirety. The sciences, one might almost say, are philosophy disillusioned.

There remains the question whether philosophy is worth while. We often hear such queries as "What is the use of philosophy?" "Does it get us anywhere?" These interrogations are really covert reproaches. In defending philosophy against them much depends, of course, on what we consider worth while and useful. If by the question "Is philosophy useful?" we mean does it help us to make money, we might as well admit at once that it isn't and doesn't. But then neither does rowing nor tennis nor cruising nor stamp-collecting nor reading detective stories nor falling in love. Yet all these avocations are pleasant, and rest upon and give expression to some interest for the absence of which our life and Life as a whole

would be the poorer. The same is true of philosophy. If people like to philosophize—and philosophy as we have seen is the indulgence of a curiosity which nobody probably is wholly without—then philosophy is worth while and useful, inasmuch as it does its share towards contributing to the sum total of self-expression and of happiness. It makes life more entertaining for some people, to say the least. We might add, also, that a man's life is presumably the richer and the better rounded and balanced, in proportion to the number of interests it can muster and resources it can command. Each new interest is another root struck deep into the infinite fertility of the World, and another source of nourishment and stimulation to the more complete and brilliant flowering of the individual's personality and career. To add, then, philosophy to our other interests is to have enlarged our life by just so much.

Moreover, philosophy is an added interest in a double sense. Not only is it one more interest, but it also gives a new zest to our other interests. Just as it means looking at the World as a whole, so it also means looking at any one of our interests in the light of all the others. It is not a self-contained and separable activity. It is rather an outlook on Life which pervades and organizes and unifies all the partial and separate views which our numerous minor selves—our business self, and our sporting self, and our artistic self, and our self at home, and all the rest—take about things. It is a sort of mobile army in reserve, which may be brought up to reinforce any point of that extended line with all its irregularities and salients, its precarious and its sure positions, along which we are in contact with the Universe. Or, to descend from the language of the camp to that of the kitchen, we may liken it to the seasoning of a dish which does not destroy the other flavors, and cannot well be separated from them, but rather brings them all out with an added intensity, losing none and combining all in a single expression of pleasure upon the palate. Philosophy is, in very truth, the spice of life.

But the practical man or the Puritan will not be put off by any such justifications of philosophy as these. What he means by "useful" and "worth while" has nothing to do with any in-

crease of the pleasurableness of Life, or of its interest, its brilliancy, and its richness. What he wishes to know is whether philosophy contributes anything to efficiency and character. Confronted even with tests like these, philosophy need not quail. It can argue with considerable force that the habits of mind which it tends to inculcate are of practical assistance in the making of a living for one's self, and in contributing to the welfare of society as a whole. The habits of looking at all sides of a question, of taking all possible factors into account, of suspending judgment and not making hasty decisions, of recognizing the right to existence, and even the importance and value, of interests other than one's own; all these are useful habits to acquire, whatever one's occupation may be. Surely it can harm the efficiency of no man, if he raise his eyes now and then from his own profession and cast a sympathetic glance at that of others, perhaps even if he catch for an instant a glimpse of Life as a whole, and feel that his own career and his own achievements are merely one of the many ways in which Life fulfils itself. And these are habits which a study of philosophy should assist us in forming.

They may, of course, like any others, be carried to excess. A suspension of judgment and an impartiality which mean vacillation and indecision and consequent inability to act are harmful if not counter-balanced, and are said to be the peculiar vice of the philosophic temperament. It cannot be denied that there is some truth in this view. It would be a bad thing, probably, if there were too many philosophers in the world. Progress would be slow if it had to be gained by that steady and equal contact and pressure all along the front which philosophy advocates. Life gets ahead by concentrating its forces beyond all reason and at considerable peril, now at this point, now at that, by creating sharp and awkward salients, by planting its flag with an air of final triumph, in positions which the meditative mind sees at a glance to be untenable, and then by gradually straightening its line through retreat and compromise. But in the campaign as a whole, the philosophic temperament even in its extreme form has its value and justification. It tends to keep the line from growing too thin in the neglected

spots, and the salients from becoming so sharp as to be detached from the main advance and destroyed, and it prepares the reserve trenches in which the inevitable retreat from the positions taken with such splendid finality by the cranks and the reformers may find shelter.

If, however, a great deal of the philosophic point of view in a few persons is not harmful but advantageous to Life as a whole, we can say the same of a moderate amount of it in the great run of people, in whom its effects are more than offset by the exigencies of practical life. We are not apt to do too much star-gazing if our noses are held to the grindstone, and, after all, it is on a level somewhere between the star and the grindstone that we meet Life face to face. We can look too low and with too fixed and narrow a gaze, just as we can look vaguely to impracticable and empty heights. The one no less than the other makes us blind to the living world. Indeed, to be awake only to our particular business is deadlier than to dream. So, in an age where the stress is laid on making a living, rather than in living on what we have made, dreaming is a habit to be encouraged, not repressed. Even in one too much and beyond redemption a looker-on at Life by temperament, and a dreamer rather than an actor, philosophy is still not an unmitigated evil. It will stimulate, to be sure, the already over-emphasized contemplative habit, but it will in some measure carry with it an antidote to its poison. For it is well that the looker-on at Life should be not simply an audience to the mere passing show of events, however gorgeous and however moving it may be, but "the spectator of all time and existence." And this nobler outlook the habit of philosophizing brings. In the same way, the visions of the dreamer will be more effective, more readily translated, that is, into action by others, if they are checked and steadied by that perception of what things can and what things cannot be, which the philosopher-poet Lucretius regarded as one of the greatest gifts bestowed by philosophy upon mankind.

There remains the question of the relation of philosophy to "character." If a heightened sensibility to what we might call the iridescence of Life—Life with all its brilliancy and its subtlety, its tragedy and its comedy, its deeps and its shallows,

its ceaseless shift and play of events and values—is a contribution to "character," philosophy certainly should breed and train this keenness and delicacy of appreciation. Again such things as moderation and tolerance, a feeling that Life fulfils itself in many and other ways besides our way and that these other ways are equally necessary to its balance and its fulness, and a corresponding willingness to live and let live are qualities which are fostered by the philosophic view. Take the habit of looking at our own life as a whole, of seeing behind the self of the moment the larger and truer self in the long run, and of estimating the worth of any decision or deed, not at the face and often fictitious value of the present moment, but by its relation to the general scheme and career which we have planned. Here certainly we have a habit which means strength of character, if it means anything. But such a habit is simply the transference to our own life and self of that way of speculating about the nature of the World in general and in the long run, and of forming an opinion about its plan and career as a whole, which is the distinctive mark of the philosophic interest. It is hard to be interested in philosophy without philosophizing about ourselves, and it is hard to think about ourselves without forming some idea of what we really want and are really after. It is also hard to form such an idea without its becoming to some extent operative in our life. But the moment that it becomes thus operative, our actions are inspired, in part at least, by what we call principles. And principles are simply the plural of character.

Finally we might point out that if the word philosophy is mentioned in the drawing-room or on the street-corner, it is apt to suggest to the majority of people a meaning quite different from that which we have ascribed to it. In popular parlance it has come to mean not so much a way of meditating upon and speculating about the World as a way of meeting and dealing with what the World brings. We say that a man is philosophical about some misfortune which has befallen him or that he takes life in general philosophically. The term here has been taken over into the sphere of moral action, to specify the kind

of behavior which might naturally be expected in trying circumstances from one bred to the philosophic point of view. But it is noteworthy that the kind of behavior which we describe as philosophic we also regard as an indication of the presence of "character" in the narrowest sense of the word.

Let us sum up. Philosophy is the interest in puzzling out from the data presented by the face and behavior of things a plausible theory regarding their heart. A philosophic system is simply a guess, not at random but based on a comprehensive survey of the world, and ready with its reasons as to the real nature and constitution of the Universe. Philosophy differs from science, in that its interest is in the "whole man" so to speak, whereas that of a science is confined to making out simply some one side or feature of the whole.

A philosophic system differs from a scientific hypothesis simply in the amount of ground that it attempts to cover. The method of philosophy—the processes of inference and verification—differs in no essential way from scientific method. To put it all in terms of the detective agency, the sciences are like the individual detectives following up and reporting upon that particular aspect of the case to which each has been assigned, whereas philosophy is like the chief who gathers all their reports together, reflects upon them, tries to harmonize them where they conflict, and to supplement them by reasonable conjecture where they fail to connect or are unable to follow the clue further into the unknown. Thus it constructs, using their reports as its data, a theory regarding the true inwardness of the case which seems to it to throw some light, at least, upon the central Mystery.

The history of philosophy, then, is simply an account of the various guesses, made from time to time, as to the real nature of the World. The different solutions of the problem are not, however, propounded entirely independent of one another. Each new philosopher will be influenced by what acquaintance he has with the work of his contemporaries or predecessors. He will accept, modify, reject, react against the opinions of others in the light of his own estimation of the significance of

the evidence in the case. Hence we may reasonably expect that the history of philosophy will exhibit continuity, and perhaps progress. It is to a study of the development of philosophic theories among the Greeks and the Romans—a full thousand years of guessing—that we are now to turn.

## CHAPTER II

## GREEK RELIGION

### I

Aristotle surmised that philosophy first arose in Egypt because the priesthood there had leisure. With the geographical correctness of this statement we are not concerned, but Aristotle's reasons for making it are significant. In the first place he lays down one of the conditions necessary to philosophic speculation. The Egyptian priesthood, he tells us, had leisure. Philosophy requires time—time to wonder and meditate and make our guess about the inner constitution of the world. For that matter, if we are going to live at all, if we are going to have even the time to be busy about other things, we must philosophize a little. We must stop long enough to make up at least a rough and ready theory about the nature of things in general, and lay down rules of thumb about their behavior. Otherwise we are liable to be retired early and forcibly from business of any sort. But to push the matter beyond the rough and ready stage, to follow up the clues and work out a fairly intelligent and comprehensive theory tested by logic, and attested by experience: this is something of a task in itself, and requires a certain freedom from the distraction of other occupation. And such freedom can be enjoyed only under conditions of social stability and prosperity. We must have escaped from the bare struggle for existence, whether it be with our fellow men or with the forces of nature. There must be at least intervals of peace and of an assured income, when we can stop making or defending a living long enough to draw breath and look about. Philosophy, then, presupposes a state of society rich enough to afford leisure, and civilized enough to enjoy it. This point will interest us when in the next chapter we come to

survey the conditions in those Greek cities of Asia Minor where European philosophy had its beginnings.

But there is another implication in Aristotle's statement which claims our attention for the present. His mention of the priesthood in Egypt will at once bring to our minds a familiar association. Most of us are apt quite spontaneously to connect philosophy with religion in a peculiarly immediate and intimate way. What is the basis of this association in our minds? Why should a preoccupation with the problems of the one be likely to mean an interest in the questions of the other? In short, what is the relation of religion and philosophy that we should feel it advisable to preface our consideration of Greek philosophy with a discussion of Greek religion? A satisfactory reply cannot but involve us in some discussion of what religion is in general.

Let us turn back once more to our opposite neighbor in the tram-car. Nudge the man beside you and ask him what he thinks that person opposite looks like. Ask him further why he thinks so. The chances are that he will reply, "Oh I don't know, I just have a feeling that the man is a good sort, or a bad lot, or what not." It will be only when you have pressed him and pinned him down that he will begin to argue his reasons for feeling as he does. We are perhaps most familiar with these first impressions, which are prior to any use of rational inference and often quite unconquerable by any amount of reasoning, in the guise of what women call their intuitions about situations or people.

In precisely the same way we all of us have instinctive feelings about the world. These feelings are not the result of any conscious process of inference. They exist before the intelligence has begun to examine them at all, and often they continue to exist after intelligence has said all it can possibly say against them. They are irrational, not in the sense that they are necessarily unreasonable or wrong, for after all our first impression about a person may be correct, or a woman's intuition may accurately size up a situation, but in the sense that reasoning has little or nothing to do with their foundation. They are prejudices in the original meaning of the word—things which

exist prior to judgment. The general place and validity of these feelings or intuitions in our life is of great interest to philosopher and theologian alike. How far are they to be trusted? Are they short cuts to a far closer touch with the heart of things than can ever be gained by the roundabout and formal way of reasoning? Or are they blind alleys which lead nowhere? After all, superstitions and prejudices and obviously unreasonable instinctive feelings about things are also intuitions or impressions as deeply rooted in consciousness as those which are taken for revelations of the inmost nature of Reality. Perhaps, then, the longer way round of careful thinking is the shorter way home so far as home can be reached at all. Such are some of the questions raised by the existence of this sphere of feeling in our life.

It is within this realm of feelings and intuitions that the springs of religion are to be found. Religion flows from, indeed religion is, a feeling about the world which precedes any process of rational inferring or thinking out anything on the basis of carefully sifted evidence. When we come to define and justify our impressions, and to argue that what we feel about the real nature of the world is logically defensible and supported by the data at hand, we have added theology to religion. Since people differ in their interpretation of this first impression and in their definition of that which their intuition reveals to them, there are many ways of formulating religion, such as the systems with which we are all familiar, Christianity, Mohammedanism, Judaism, Buddhism, and the like.

But the feeling about the nature of the world which underlies all these various formulations seems to be the same. It is the feeling that at the heart of the world there is Something akin to our own heart with which we may communicate and from which we may receive strength and support. We might almost say, indeed, that religion is a sense of personal relationship to the inner nature of the Universe, an impression that the face of things masks another self like our own with which we may deal as we would with a fellow being. And we might add that as the moral experience of the race grows and the vision of perfection becomes more distinct, more intense, and more

ardently yearned for, this living Something at the heart of things is felt more and more to be in sympathy with the Good and our pursuit of it. It becomes a friend to whom we may turn for advice and sympathy and help in our struggle towards the ideal, sure that they will not be denied us.

We all of us know the difference that it makes if we go for a walk or a ride with a friend, even if it be only a dog or a horse. The two of us may go in single file, and I may not hear even the breathing or the footfalls of my companion, or both may go in silence each preoccupied with his own thoughts. The dog may range far afield in his own engrossing, adventurous world, with but scant time for me, or the horse may pick his way so softly and evenly down the wood-road that I may forget him altogether. But nevertheless such a walk or ride has a difference as real as it is subtle from walking, or running, or from driving a motor car, alone. We are familiar, too, with the contrast between the atmosphere of an untenanted and that of an occupied house. The one is cold and aloof with no response to our presence save echoes, the other is warm and personal and welcoming, though we may not see the occupants. Or again, for example, the Catholic finds the Protestant church empty and dreary and unhomelike, for the want of the real presence of the living Christ in the Host upon the altar.

Now to religious experience the Universe is not untenanted, but occupied. Life is not a solitary journey, but walking with a friend whose presence though not seen is felt, and the feeling of whose presence makes all the difference in the world. This definition of religion in terms of a "personal equation" will cover those forms of religious experience with which we are most familiar. But it must be remembered that there is a temperament and there are religions to which personality and what we call "self" mean limitation and imperfection to be escaped and transcended. From such a point of view the sympathetic Something existing behind the outward semblance of things will naturally be felt and thought of as impersonal in character. But it is still regarded as of like nature to our own deepest and truest character, of which our own personality is no more than a passing and illusory expression. Such is the teaching, for

example, of certain forms of Buddhism, where we find, instead of a personal God, an impersonal condition called Nirvana, and such we shall find to be the underlying thought of mysticism in general in connection with whatever religion or system of philosophy it may appear.

There are few people who have not had this feeling of a living and companionable presence astir, it may be in the outer world in the silence of a forest, or the level lights and quiets of a sunset, or snow mountains far away, or it may be far down within one's self in the storms and calms that move and brood over the depths of one's most inaccessible and incommunicable experience. Such impressions may be infrequent and fleeting, but they are the drops which go to make up that great ocean of religious experience which beats perpetually along the shores of philosophic and scientific thought.

It is easy now to understand the preoccupation of philosophy with religious questions. Philosophy when it approaches its task of framing a theory about the inner nature of the world, finds someone ahead of it in the field. It is met by religion and confronted with an established sentiment as to what Reality ought to be like. It cannot then go about its work with a perfectly free hand and unbiased mind. It knows from the start what the impression of religion is in the matter, and in forming its own conclusions it cannot ignore that impression. Try as it may, it cannot follow out its line of thought as it would if that feeling did not exist. It may find itself denying the validity of the intuitions of religion and maintaining that they are to be rejected along with other irrational and unreasonable prejudice and superstition. Or, on the other hand, it may try to confirm them by logic and evidence. Again, it may accept them in part, reject them in part, or modify them as reason and the data at hand would seem to dictate. But whether it explains or explains away, defends or attacks, its volubility is due to the unescapable presence of this religious feeling about the real nature of things. Even if a philosophic system ignores religion with a studied indifference, and in its effort after perfect detachment of point of view banishes from its vocabulary every term that is suggested, however remotely, by theology, its

unconsciousness of the religious interpretation of the world is about as genuine as one man's unawareness of another whom he is deliberately cutting on the street.

If philosophy cannot help noticing the presence of religion in life, we need not apologize for this chapter. Greek philosophy, like all philosophies, grows up in the midst of the religious beliefs of the day, and it is very much our business to inquire what the particular religious atmosphere of the Greek day was like. It should be understood, however, that we cannot concern ourselves with Greek mythology as such. Interesting as the subject is, it is beyond our province to investigate, for example, that half-descried primitive cult which seems to have existed long before the invasion or the development of the mythology which we find crystallized in Homer. We must content ourselves with remarking that it was a cult of the creative and destructive powers of nature as manifested in the death of the fertile earth in winter and its resurrection in the spring, and of the corresponding cycle of birth and death in man; and that it involved a ritual of propitiation of the dead, invocation of life, sacrifice of sacred animals, and communion with the divine through a partaking of their revivifying flesh and blood.

Nor can we rehearse again the long and splendid story of the Olympian Gods as told by Hesiod—how they sprang originally from a monstrous ancestry of chaos and black night, how they were brought to slow and painful birth through the death pangs of intermediate dynasties and generations, and how, born at length, they warred with and overthrew the Titans in a last tremendous battle which made them masters of the world. Again, we have no time to trace in the pages of Homer and the later poets the slow growth of the Gods out of brute force into goodness and beauty, or to show how their worship became less and less a worship of the untamed and unmoral elements and forces of nature, and more and more the vision and adoration of an ideal world purified from violence and inhumanity and made the friend and support of all that is best in man.

Finally, we cannot give the consideration they deserve to the doctrines and rituals of the Eleusinian and Orphic Mysteries,

focusing as they do religious aspirations and demands other than, and often in their direction counter to, those which inspire Olympianism. We have time only for a brief discussion of the underlying religious experience of the Greek, to which theology and ceremonial but give articulate and appropriate expression. To the consideration of this inward and invisible grace of which myth and rite are the "outward and visible sign" we must now turn.

## II

It will be remembered that in speaking of religion as essentially a feeling that at the heart of things there is Something akin and responsive to our own hearts to which we may turn for companionship and help, we pointed out that this sense of sympathy and support might seem to come to us either from the outside world of nature or from within our hearts through a still small voice speaking out of the hidden depths of inner experience. To some it might come most vividly when they went out and raised up their eyes to the hills, or to the "mighty marching and the golden burning" of the starry night, to others when they had closed their eyes and shut out the world and had retired to some far-away, secret recess of the soul.

Now, the religious experience with which we are most familiar, and under whose influence our modern philosophy has developed, is of the latter inward-turning, subjective type. From the beginning Christianity has bade man seek God within himself, and has taught that the external, physical world and the ranges of experience with which it furnishes us are if anything obstacles to that search. The process of salvation is essentially an inner process. It is a rescue of the inner life from dependence upon the outward world and a restoration of it to an immediate communion with God in which the physical and the external are forgotten. The objective side of Christianity, the historic Incarnation and Redemption, is but the lever for applying pressure from without to loosen the soul from the hold of the body and the bonds of Nature, and to impel her to a "supernatural," "spiritual" career and destiny.

The interest and solicitude of Christianity, then, center about the soul, the character, the personality, the private relation of the individual will to the will of God. The world for which the blood of redemption was spilled is the moral world, the great company of immortal spirits estranged for a while from each other and from God by the barrier of the body and the limitations of the material universe. No drop of that blood overflows into the outer and physical world. In the benefits of salvation no being, animate or inanimate, save the human, shares. The physical world remains unchanged. But after all, from the Christian point of view, why should Nature be affected by the process of redemption? Except for man, we are told, her animate forms are unmoral and without souls, and for the rest she is mere inert, dead matter, a creation, not a creature. Her relation to humanity is at the worst that of a prison for the brief incarceration of the soul; at the best a temporary stage for a transitory actor, from both of which there is speedy exit to a supernatural life and destiny.[1]

Greek religious experience, however, presents in all these points a great contrast to Christianity. In the first place, it was not an introspective experience. The ancient Greek was not given to self-analysis and self-questioning. He did not isolate his self, as something different and apart from the rest of things. He did not regard his consciousness as having a different kind of being from other things, or even mark it off very clearly from the things by which it was surrounded. He was scarcely conscious of having a soul, or of being a person in the exclusive and self-conscious sense in which we use the terms. The problem of the "inner life," the reverent discussion of "moral personality," the painstaking effort to distinguish the real behind the apparent duty, would not have interested him. For that matter he had no words in his language to reproduce the tone, and in many cases even to translate the terms, we use when we speak of "person," "personality," "individual," "individuality," "the self," "selfhood," "self-consciousness," the

[1] It is interesting to contrast this preoccupation of Christianity with the human soul, with the saying of the Buddhists, "There is not a particle of dust that shall not enter into Buddhahood."

"ego," the "I," "conscience," etc. Still less would he have understood us when we hyphenate them with the words "moral" and "ethical" and "higher" and "inner" and "inmost," and generally exhaust the vocabulary inspired by that painstaking self-examination which plays so large a part in the religious experience of to-day, and is the source and essence of so much of our modern philosophy.

This lack of self-importance and self-consciousness in the temper of the Greek mind has its complement in the attitude of the Greek towards the external, physical world. As he did not feel that a person was essentially different from other things, so he did not feel that other things were essentially different from persons. The world, including himself, was all of one piece, and the life moving and feeling within his own body was but a sample of the life that moved and felt in all other bodies, in sky and sun and sea, mountain and river, field and wood. The distinction between the animate and inanimate he had not as yet drawn. He looked upon Nature as essentially akin to himself, not dead, but alive to the very twig-tips of the shimmering, quivering olive-groves that set his own cities about. She was not a creation but a fellow-creature, not a machine but something to treat as one would treat one's fellow-men and responsive to such treatment. He found a warmth, a pulse, a breathing, and a trembling in the things which for us are still and cold and inanimate. In a word, whereas the events and objects of the physical world are for us at the best mere staging or furniture to the play of human life, for the Greek they were co-actors, with their appropriate costumes, lines, and parts in a larger drama which included men and things alike.

Perhaps we come as near as we may to understanding the Greek feeling for Nature, if we say that the attitude towards the outer world which is sometimes the privilege of the imaginative, country-bred child was kept by the Greek always, not stifled but intensified by the maturing of his experience. To the child, also, things move and whisper, alert with something alive and akin to himself, forever hiding and peering from behind them. He does not personify deliberately, but things for him as for the Greek are still people and have not yet been

divested of their personality. Most of us have had the experience of catching for an instant in the lines of a gnarled tree-trunk or rocky cliff the vague yet startling semblance of a human face. But, to make of the experience a sort of parable, we might say that whereas for us such haunting semblances are soon dissolved and lost in the other lines and forms discovered by further observation of nature, for the Greek they persisted, and continued to dominate the other patterns which a closer examination of Nature revealed. Things did not die as they do with us into cold fact and disembodied fancy. Shades of the prison house did not close upon him; and in the sunlight he never saw simply "the light of common day."

Religious experience, then, came to the Greek from without. The sense of companionship and sympathy at the heart of things led him not to an inner, secret communion with an unseen friend but to friendship with the outer world. He communicated with his Gods not by a telepathy or thought-transference, which takes place beneath the surface without any perceptible medium of exchange, but by the ordinary means of communication between human beings. He heard the voices of things. He looked upon the face of Nature, and beheld its beauty, its joy, its sorrow, its wrath, and its desire. He saw the "tears of things," and their "innumerable laughter." And he knew how the Gods felt, and felt with them, even as one man will catch the meaning of another from the expression of his features, his gestures, and his spoken words.

It is true, as we shall find when we come to discuss the doctrine of the Eleusinian and the Orphic Mysteries, that there is also in Greek religion a powerful undercurrent setting in the other direction and seeking God through the channels of the inner life. This tendency gathers strength later, colors and directs to a considerable extent the philosophy of the Roman Period, and contributes not a little even to the subjective aspect of Christian thought. Very early, too, in the history of ancient philosophy we shall come upon a presentation of the "mechanical" view of Nature so nearly complete and definite that modern science has done little save to fill in the outlines in greater detail. But neither the "mechanical" view of the Atomists nor

the "subjective" and "mystical" tendencies of the Mysteries could turn the Greek mind back from the outer world and in upon itself for its religious experience. This was true even in the later days of the final triumph of the subjective and mystical cults, when a world-weary and introspective age sought refuge from the religious and moral chaos of the old order in the sure and inner communion with the divine which they promised. Not even then could they dispossess the Hellenic mind of the feeling that though Nature might be far removed from God she was still sprung and descended from him, and that the radiance of her face was still the light, diminished and darkened perhaps, of his countenance.

Upon the essential humanity of the Greek Gods we cannot too strongly insist. Hauntings there were, of course, in myth and rite of the ancestral terrors of primitive man helpless before forces which he could not control or comprehend. But the age of terror and the disordered and monstrous deities which it bred had long since passed. The sense of kinship with Nature meant to the Greek a world not only as living but as human and as sane as himself. As his vision of civilization became clearer and steadier, and his grasp of it more sure, he neither detached his Gods from Nature and opposed them to her, nor contrasted his conduct and the ideals and rules which inspired and governed it with the behavior of physical phenomena. He simply infused Nature with his own growing civilization, and found more and more clearly revealed in her processes examples of the order and balance and harmony and fitness which he had learned to worship, and sought to realize in human life.

As a result the Hellenic mind drew late and indistinctly the line which we make so sharp between natural or physical, and moral, law. Natural law, we say, is simply a description of how Nature actually does behave; moral law prescribes how people ought and perhaps are obliged to behave. But Science insists that the processes of the physical world must not be regarded as governed by moral obligations or motives. The movement of bodies in space is not actuated by ethical considerations. The formula of gravitation is not a police regulation. Chemical elements do not combine because combination is to the advan-

tage of the world as a whole, or dissolve out of obedience to the decree of some higher court which has the interests of the Universe at heart. To explain the behavior of the natural world on moral grounds is, we feel, to turn Science, and for that matter Ethics, topsy-turvy. But we only feel so because we have isolated ourselves and our ideals from our universe, and have contrasted ourselves as moral beings with moral aims to the unsympathetic mechanism of the physical order which surrounds us.

To one who felt, however, as the Greek did, that the material world about him was not a machine but essentially a society of beings similar to himself of which he was an integral member, the law of gravitation, for example, might well seem a moral law, which holds physical phenomena to their appointed places and appropriate tasks with all due consideration for one another, in the same way that it exacts from men an observance of their duties, and a respect for one another's rights. And conversely he might regard the laws of human society as representative articles of the constitution of the world and that constitution as a Bill of Rights and duties for all beings alike. In a Universe so conceived the notion of mechanical and physical necessity would not as yet be sharply distinguished from the idea of propriety and right, when it came to explaining why things are what they are and behave as they do. The distinction was drawn fairly soon; but we shall find persistent in ancient philosophy interesting expressions of this tendency to consider moral and physical law, as well as animate and inanimate things, essentially the same.

We can sum up and restate this attitude of the Greeks towards their Gods by saying that the analogy dominant in their conception of the Universe was that of a society. To Greek religion the Universe looked and behaved as if it were an enlarged edition of the city-state. Men and things were alike citizens of it, and equal before its laws. The Gods were the aristocracy, men the commoners, of this commonwealth. The constitution of Nature was through and through a political constitution.

That the Universe was the fatherland and home of Gods and

men alike, implied for the Greek not only a physical but a moral tie between the divine and human natures such as Christian theology has no conception of. The Gods shared our space and time and bodily conditions and were in and of our world. They had, in a word, the same physical environment as we. And the base, like the range of their experience, was similar to ours. They shared our passions, and feelings, and interests. Their ways were our ways, and their thoughts our thoughts. So, to use rather a daring figure, man and dog live together in the sympathetic tie of a habitation and an animal nature and experience shared in common. But, as the poet Maeterlinck has somewhere said, the dog is the only creature which has really found its God. And even as the nature of man is the nature of the dog raised, as it were, to a higher power, so for the Greek the divine was human nature with all its body, passions, and intellectual and moral parts intact but perfected and glorified.

This community of the divine and human natures in so many respects put man on a friendly and familiar footing with his universe and his Gods. In the words of Mr. Dickinson, it "made him at home in the world." [2] The Greek would not have understood, and would have rejected as barbarous, the feeling that no man could look upon the face of God and live. Even the Christian analogy of a Father and his children would not have best expressed their feeling of the familiarity of God and man. For the Greek at the most thought only of Zeus as a Father, and even he was so human in point of view as to seem like an elder brother. And as for the others, they were older brothers pure and simple, more grown up, more experienced, greater, stronger, wiser, better than we, but still of the same race and parentage and to be treated with fraternal camaraderie.

In a word, the Greek felt himself the social equal of his God. God and man met in the same house and ate at the same table. The distinction between them was a distinction of title and ability and office alone. In the same way to-day royalty and gentry are both members of the same class and as such mingle with one another. So it was that the Greeks prayed, neither

[2] *The Greek View of Life*, p. 4.

prostrate in the dust like the Oriental, nor kneeling with bowed head like the Christians, but with uplifted face and outstretched hands. In the divine presence they behaved as Kipling tells us the souls of the heroes behave:

> "And they rise to their feet as He passes by, gentlemen unafraid."

At the same time, this social equality and familiarity of man with God was tempered in the attitude of the orthodox worshiper by a recognition and punctilious observance of the difference in rank between himself and his divinity. Familiarity with him bred not contempt but respect. "One is the race of men and Gods and from one mother we both derive the breath of life; but in power we are altogether diverse; for the race of man is nought whereas the brazen heaven abides a dwelling place unshaken forever." [3] And again, "Seek not to become Zeus. . . . Mortal things befit a mortal." So the poet Pindar sings, and his words are a fair index to the mind of the orthodox Greek. A trespass upon the prerogative of the Godhead brought upon it a rebuke as swift and sharp as any administered by a king to an impertinent courtier. Man must keep his place, or he would be summarily put in it. The fact that underneath the difference in rank Gods and men were fellow-beings and alike gentlemen, gave man no license. Where there is the chance and temptation to presume, etiquette has to be the nicer and the more rigid.

In its worst form, this feeling of the Greek that every nature in the Universe has its proper excellence upon which it is folly to attempt to improve, and bounds which it must not overstep, crystallized in the famous doctrine of the envy of the Gods. It was a popular belief that the Gods were jealous of overmuch even strictly human happiness and prosperity, because man was raised thereby towards a dangerous equality with the divine. This view was by no means confined to Hellenic thought. In the Old Testament Jehovah proclaims himself a jealous God, and Adam, we may remember, was expelled from the garden of

[3] Pindar, Nem. 6, 1-7 (trans. Adam).

Eden not so much for disobeying the divine command as from the divine fear lest man having "become as one of us, to know good and evil," should now "put forth his hand and take also of the tree of life and eat and live for ever." [4] The sentiment persists to-day in the habit of accompanying any boasting thought or speech with an apologetic and propitiatory tap upon the nearest wooden object. In its finer manifestations, however, the feeling was bound up with the Hellenic sensitiveness to moderation and balance and reasonableness as the essence of all the virtues, and with the conviction that blindness to the limitations of one's nature and station with its consequent immoderateness and presumption and insolence is the root of all moral evil.

## III

For us to revitalize this social and political analogy is as impossible as it is to recover the Greek sense of kinship with nature. But it is obvious that in its light many notions common both to philosophy and theology, such as the omnipotence and omniscience, infinity and perfection, of the divine nature must have had a meaning for the Greek very different from their significance for us. We speak of God as both infinite and perfect with no sense of contradiction. Indeed, we feel that perfection is enhanced by infinity. The Hellenic mind, however, found the two terms absolutely incompatible. It was the clear-cut, the comprehended, the definite, the familiar, which was the perfect. The limitless was that which had no definite nature to know a definite law. But only that which had a determinate and attested character and was under obligation to fill a specific place and fulfil a specific function could be part of a thoroughly civilized and ordered world. The Gods then could not be infinite. They were rooted in a definite moral ideal. Their outlines, at last descried and held in clear and steady vision, were not to be blurred and erased again by the concept of infinity.

The Greek habitually spoke of the Gods as all-powerful and

[4] Gen. iii. 22.

all-knowing, but here again it is plain they did not mean by the terms what we mean by omnipotence and omniscience. They used the words in a qualitative rather than a quantitative sense. We, for example, are not surprised at the notion that the universe was created out of nothing by the mere fiat of a divine will. "And God said, Let there be light, and there was light." But the idea of thus conjuring a world into existence from sheer nothingness by a simple word of command was wholly foreign to the Hellenic intelligence. Indeed, the Greek version of the matter was the exact reverse of the Christine doctrine. God did not create the Universe, but the Universe produced the Gods. Or rather the Gods and the ordered world arose alike by successive stages out of the same primæval chaos. And when the Gods did finally take a hand in the direction of affairs and became active factors in the further evolution of the cosmic order, it was as powers in contact or even in conflict with other already existent forces. They did not create, they merely remodeled and reconstructed. They were subject to the limitations imposed by the inherent properties of a given material and by the features of a plan already for the most part drawn out. Their nature and position were more exalted than ours, to be sure. Their rôles were more splendid, and they played them perfectly, but like ourselves they were still actors, not authors, of the world-drama.

This feeling that Gods like men are subject to the constitution of a world-state which allots them their places, lays down their privileges and powers, and holds them to their offices, was expressed by the Greek in the concept of Moira or Destiny. The idea perhaps was bound up originally with some primitive habit of thinking of the world as a sort of field on which the "claims" of all things were staked out and the bounds of each plot or lot sharply drawn.[5] But it also soon carried with it the suggestion of a dim Power or Necessity behind the Gods which laid a restraining hand upon their natures and activities, and compelled them to keep within the bounds of their allotments.

A sense of such an all-compelling Fate whose decrees even the Gods cannot bend was strong in Homer. Later, as the idea

[5] *Cf.* Cornford, *From Religion to Philosophy*, p. 10 *seq;* p. 40 *seq.*

of the Gods developed, Destiny and Necessity tended to become identified with the supreme will and authority of Zeus. But even in Æschylus where the exaltation of Zeus above the other Gods is carried to an almost monotheistic conclusion, we find the query whether the Most High himself may not be weaker than the Fates and those implacable avenging ministers of Justice, the Erinyes; and the answer is that even he cannot escape what has been apportioned him.[6] In connection with this theological point of view it is interesting to note that the idea of an absolute creator was entirely absent from Greek philosophy, and that until very late matter was regarded as uncreated and coeternal with whatever other first principles were invoked to explain the world. Moreover, in later Græco-Roman philosophy the question was of the possibility not of a creation of matter out of nothing, but only of deriving it from or identifying it with the divine substance itself.

When the Greek then spoke of his Gods as all-powerful, as he frequently did, he did not mean that the Gods did or could create or annihilate or radically alter a world at their pleasure. He meant merely that they had all the powers suitable to their office. They could effect everything it was incumbent upon them to perform. The dignity and authority of the rulers of a city were not curtailed but enhanced in his eyes by the fact that they were constitutional rulers, nor were their powers less full because defined by law. And the Gods were constitutional magistrates, not absolute or despotic rulers such as ruled the barbarians. They had their office determined by the nature of things, and powers commensurate with that office. They were the administrators of the moral and physical equilibrium of the Universe. They could keep things to their courses and places, and men to their places and duties. They could control natural forces and subordinate them to the enforcement of Right and Justice throughout the world. More power than that would have added nothing to the divine majesty and would have imperiled the "constitutional" character of the Universe. For power prostituted by disorderly means to wayward ends only makes the concept of omnipotence meretricious.

[6] Æschylus, *Prometheus Bound*, 11, 531 *et seq.*

The same is true of the Hellenic view of the divine omniscience. When the Greeks said that a God knew all things, they meant simply that he knew all that it was necessary or appropriate for him to know at the moment or in the long run. They did not mean that his mind was congested with an observance and knowledge of all that happens everywhere and at all times. The amount of his information was governed by fitness and relevancy to circumstances.

This qualitative as compared with our quantitative view of omniscience, is expressed very clearly in the system of Aristotle, which marks the highest point reached by Greek, or perhaps any, philosophy in its speculations about the nature and activity of the divine mind. God is represented as without experience of the world of sense, or even knowledge of the existence of such a world. His thought is purely abstract—of forms and laws—and these, again, the forms and laws of abstract thinking without any content of perceptions or images. Thus his intelligence, freed from the distraction of any external objects of knowledge, is at liberty to contemplate only itself. But this is no restriction upon a divine intelligence, for nothing but its own supreme and perfect nature is worthy of the attention and thought of a divine mind. There could be no greater contrast to this view than the modern idea of the all-seeing eye and the all-inclusive mind of God.

## IV

We have seen that because of fundamental differences in attitude and feeling towards the world, the Greek view of the divine nature and its relation to the Universe was quite removed from our own. What we are wont to regard as absolute and unlimited, the Greek drew quite frankly to a human relative scale, taking the measure of the completeness of the divine by merely remedying the shortcomings in human nature. We turn now to certain oppositions between Greek and modern thought touching questions of ethics, which we may refer to the same underlying tendency to think of the order of the Uni-

verse as a sort of enlarged city-state of which men and natural forces and phenomena were all alike citizens.

In human society the individual man is limited by certain conditions. He has his place, his part, his lot, to which he must keep. He may enlarge his individual sphere, and may grow, to be sure, but his growth must not unduly interfere with the self-development of his fellows and neighbors. Friction and interference there is bound to be, but it is the business and the very condition of the existence of the state to reduce the amount of trespass upon property and personality to a minimum. But mankind was for the Greeks also part of a larger cosmic society which defined and limited the sphere and activity of human nature with the same respect for justice and equity as dictates the action of the state in setting bounds to the activity of the individual. Upon these two considerations the Greek view of virtue rested. The essence of virtue lay in the observance by the individual of the restrictions placed upon his particular nature by the human society of which he was a member, and upon human nature as a whole by the cosmic social order to which it in its turn belonged. Virtue was respect for the established order of things human and divine, expressing itself in appropriately restrained and directed actions. It was not doing the things which "are not done" in dealing with a fellow-being or a God.

But it is difficult to know just what the bounds are, and to see clearly when we are within our rights and upon our own property, and when we are trespassing upon the rights or lots of others. We are only too apt to be blind to the line that separates the one from the other. But if we are thus heedless, we overstep the line, go beyond the appointed limit, and presume beyond our station. We are insolent to the established order. This heedlessness, if persisted in, becomes a habit, a chronic blindness to the proprieties of things and disrespect of the social and cosmic law of Justice. Thus little by little sin sets and hardens in the character.

The Greeks, of course, like all other peoples and times, had their own code, dictated by the particular circumstances of their existence, of what especially constituted transgression

of the moral law. And this code, naturally enough, differed from our own. But the interesting comparison for us is the difference in the fundamental concept of sin.

We must note, in the first place, the objective and, one might say, impersonal character of the Greek idea. We are taught to think of sin as something whose real significance and results are internal, involving an inner estrangement of the soul from God which is far worse than the objective character and the possible objective consequences of the sinful act. The will is perverted, the soul corrupted and diseased. From this state of sin there is no natural recovery. The healing power of the divine grace must be called in before the soul can be restored to spiritual health and a reconciliation of the human with the divine will be effected. But on the other hand if the reconciliation is effected, and the reassurance is at hand, the whole objective side of the evil deed, its consequences for others, and the penalty which society may exact for its commission, no longer matter. The soul has made its peace with God. All that is of importance, then, in sin and conversion and absolution is subjective and unseen.

But the Greek temperament, in its dominant mood at least, suffered little from what modern theology calls the "conviction of sin." It was not burdened with a sense of unworthiness, or with a feeling of being stained through and through, beyond hope of cleansing itself, with the taint of moral evil. The objective and external character of the act and its consequences exhausted the sinfulness of the deed, and left no residue to corrode the soul. When the retributive action of human society and the compensatory workings of the divine justice had exacted the due penalty from the sinner, he might be regarded as discharged and his account as cleared. Indeed, the payment of a fine, in the shape of gifts and sacrifices and propitiatory acts, could often be substituted for punishment, and the divine vengeance thus averted. But although the sinner were left bruised and sore, as well as out of pocket, his soul was not internally and organically injured. If only he had learned wisdom through his suffering and come to a realization of his place and limitations, he was as good as new. Of course

if he did not profit by his lesson, but persisted in his short-sightedness, blindness to the true proportion and perspective of things would grow on him as a habit. But, even so, the sinful propensity was not thought of as a disease of the inner nature and nerve of moral vision, but rather as a kind of film of progressively denser stupidity drawn like a cataract over the surface of the eye. Remove the cataract, enable the individual to see clearly his true relation to others, and his naturally intact and healthy vision would reassert itself unimpaired, and keep him upright and from losing his sense of balance.

In short, whereas for Christianity the origin and seat of moral evil lies in the will, for the Greek it lay in the intellect. We talk of the will disobeying the better judgment, ignoring a clearly seen and recognized distinction between right and wrong, and deliberately flouting the plainly heard voice of conscience and of God. But the Greek would have said that we did wrong primarily because we did not know the right. The judgment became confused, the sense of proportion was blinded, and as a result we lost our balance and fell into evil ways. The very word for sin meant originally "a missing of the mark." It is to this old conception of sin as mental aberration, which goes back to Homer, that we must look in part at any rate for the intellectual bias of all Greek ethics, and for Socrates' famous dictum that "virtue is knowledge" and that if a man only knows the right, he will always do it.

Finally, the difference between right and wrong doing was for the Greek a mere difference of quantity. The impulse to virtue and the temptation to vice did not come into the human heart from different directions and sources. Both had the same origin in the instincts and the energy with which human beings are endowed. These instincts and interests were the mainsprings of human progress and happiness. Yet in so far as they also urged men to aspire beyond the bounds of their individual provinces, and to encroach upon those of their neighbors, or incited mankind as a whole to dream of becoming as a God, they were at the bottom of unhappiness and sin. That is, sin was simply overdoing, or it might be underdoing, some-

thing that was in itself a good. This feeling manifested itself strongly, as we shall see later, in the Aristotelian teaching that vice is the deficiency or excess of the same qualities which in moderate and adequate amount constitute virtue.

For the Christian, however, the difference between good and evil is more than quantitative. The arrogance of the sinner is not simply too much of the same assurance which makes a man efficient and successful and happy. The force which makes one miss, is essentially different from that which makes one hit, the mark. The motives of right and wrong doing spring from different sources and flow in morally opposite directions. Indeed, so radically opposed is the character of the vicious to that of the virtuous will that it almost seems as if they could not belong to the same nature. They are intertwined, to be sure, in every man, but they are rooted in separate soils. The human being thus tends to split asunder into two conflicting natures, a higher and a lower, the "Lord from Heaven," to use St. Paul's phrase, and the "old Adam," the one sustained and directed by the grace of God, the other excited by the prompting of a devil.

A movement towards this point of view we shall have presently to remark also in Greek religion. But it never attained the virulence of Christian dualism. Nor could it vitally affect the more fundamental tendency of Greek ethics to regard virtue and vice as different degrees of the same activity, the right and wrong amounts of which were determined by outer considerations and by a sense of the proportion and harmony and balance necessary to the completest life of the individual, the most harmonious constitution of society, and the most order in the universe at large.

## V

Another point of contrast between orthodox Greek religion and the religious doctrines to which we are accustomed is the comparatively slight part which the doctrine of immortality plays in the worship of the Olympians. There has been frequent notice by students of Greek literature and religion of

the lack of interest in the question of the survival of the soul after death shown by Homer, by the poets of the Seventh and Sixth Centuries, B. C., and by the great tragedians, whom we may regard as representative of the educated and reflective thought of their times. In Homer, to be sure, the dead left behind them souls which went wailing down into the dark house of Hades beneath the earth. But these souls were shadowy and witless images without substance or intelligence, drained of the red blood of real existence, and deprived of all that makes life worth living. And their habitation was a gray and sunless land where nothing bloomed save the ashen flowers of the asphodel. When Odysseus in his descent into Hades met the ghost of Achilles, the latter told him that he had rather be the servant of some man of mean estate above ground than rule over all the worn-out dead below, and the speech voiced the attitude of Homeric times towards an after-life. Nor was there any idea, save in the cases of a few notorious sinners against the Divine Majesty itself, of future reward and punishments. As for the rest, the good and the wicked fared alike in the spectral twilight of Hades.

Again, the poets of the Seventh and Sixth Centuries, impressed as they were with the misery and injustice of life, and with the problem of justifying the Gods' apparent failure to apportion reward according to merit, never invoked Immortality and the idea of compensation and retribution in another world as a possible explanation and palliative of the state of affairs on earth. The tragedians, too, although they must have been subject to the counter-influences of the Orphic and Eleusinian Mysteries which we are about to discuss, made astonishingly slight reference, so far as we can tell, to an existence after death. It may very well be that the proprieties of their dramatic art demanded that they should exhibit justice done and the moral equilibrium of the Universe restored here and now, on this earth, before the eyes of the audience. A play could not well be ended with the statement that the hero or the villain would receive what he deserved after death. But at the same time their silence may be taken as a suggestion

that orthodox Greek thought as a whole up to the time of Socrates paid little attention to the idea of immortality.

## VI

We have already given warning that there were in Hellenic religious experience tendencies in some respects different from the points of view which we have been describing. They merge indeed into the general background of Greek religion, with its unwillingness to distinguish between persons and things, and its sense of the solidarity of Gods and men as alike the children and the dependents of the same World-Process and World-Order. But upon this common stock of sentiment and attitude they grafted religious needs and yearnings which the established cult of the Olympian Gods failed to satisfy, and out of it they developed an answer which seems often more in keeping with the Christian than the traditional Hellenic point of view. It is to these counter-currents that we have to devote the rest of this chapter. We can best effect the transition by drawing attention to a paradox inherent in religious experience in general.

We have defined religion roughly as a feeling that behind the face of things there is at their heart Something akin to our own inner life, which can be treated and treats us like a fellow-being. And we have pointed out that as the moral evolution of man progresses, this Something is conceived as sympathetic, helpful to the right rather than the wrong, and possessing and exemplifying the qualities and condition of life which we regard as ideal and after which we struggle. God is God because he is good, and on the side of the Good.

If now we reflect upon what we mean when we say that God is good, we shall find that we really have two quite different and opposed ideas in mind. On the one hand we mean by the goodness, the perfection of God. God is divine, is God, because he is lifted clear of all imperfection above the sin and sorrow and suffering which render human life incomplete and distressed and restless. He is the Ideal, the unbroken Peace, the fulfilled and sorrowless and deathless Life that knows no

evil, the Happiness upon which no shadow lies. And it is because he holds before us this Vision of a Life detached and liberated from all the weaknesses, the temptations, the struggles, the failures, the bereavements of human life, that he is worshiped and glorified.

But although by thus focusing all the dreams and desires of the world in a vision of existence made perfect and happy, the idea of God fulfils the noblest of its functions in human life, religious experience makes another no less insistent demand upon it. God must be more than a still and splendid Vision of Perfection. He must love mankind as well as be loved by it, must stoop to the world, must know, and in order to know fully, must undergo the temptations and struggles and sufferings of our life. And he must ardently yearn and strive and even sacrifice himself for the redemption of his creatures. But in that case his life must be as full of dissatisfaction and restlessness and pain, and of longing for the coming of his kingdom, as ours. To say this, however, is to contradict our first demand and mar our Ideal, which is ideal precisely because of its freedom from the imperfect aspects of our life. We are asking in the same breath that the Divine Life shall be both as unacquainted with pain and sorrow and death as we should like our life to be, and as acquainted with grief as our life actually is. We are permitting in Heaven precisely the conditions which we are striving to banish so far as we can from earth.

This paradox has troubled theology and philosophy not a little. In ancient philosophy, for example, it took the form of a controversy between the Stoics and the Epicureans, as to whether God was worthy of worship because he was a beneficent and active Providence, or because he simply enshrined, free from all contact with the world, the vision of Perfection. Aristotle prior to the Epicureans had already declared for the latter view, and carried it to its logical conclusion. God, he had said, did not bestir himself in the matter of the progress or the salvation of the world. He was simply the motionless Goal towards which all things aspired, the one Example of achieved perfection, whose completely fulfilled and happy ex-

istence incited all other natures to strive, each after the realization of its own capacities and excellence. So absorbed, indeed, was the Aristotelian God in his own perfection that he did not even know of the existence of the world which his example aroused out of formless lethargy to energy and order. It is interesting to contrast this view and Aristotle's famous statement that God incites motion in the world simply "as something beloved," unmoved himself, with the saying of the author of the Fourth Gospel that "God so loved the world, that he gave his only-begotten Son" for its redemption. Indeed, the two statements might almost be taken as the mottoes of the two opposed demands upon the goodness of the divine nature.

Now it is fair, I think, to say that the cult of the Olympian Gods drew its chief sustenance from the demand that the divine nature should present a vision of attained perfection. The Gods, to be sure, intervened in human affairs, bestowing benefits, rewarding the righteous, punishing the unjust, and were to be petitioned and placated as the case might be. But their worship came less and less to depend upon what they did, and more and more upon what they were. Their righteous government of the world was if anything but a reflex expression of their ideal characters. Had they been retired from active service to the world, as the Aristotelian and the Epicurean Gods actually were, their characters alone, formed and built up out of the Hellenic yearning for beauty and serenity and order, were sufficient to insure divinity and adoration. As a matter of fact, the nature of their activity in the world, their administration of the cosmic balance and justice and their direction of human affairs, never involved them in the coöperative and redemptive relation craved by one side of our religious experience. They were the patrons and protectors of particular states or cities or individuals whose prosperity and happiness they had at heart. But in spite of their glorified humanity, they never broke down the barriers of superior rank which separated them from human nature, or abandoned their prerogative of luxurious and immortal life, and became like one of us, knowing our infirmities and our fate. They knew about our misery from without, they did not experience

it from within. Their deathless felicity was unclouded by the mortality and unhappiness of our lot. As Hermes says of Zeus in the "Prometheus Bound" of Æschylus, they did not know the meaning of the word "alas." They dwelt afar off in the calm, unclouded peaks of that Olympus up whose steep cliffs shrouded by mists, swept by storms, and chilled by snows, all men toil, but they could not guide and help or even tell us the path to their serene, unshaken seats.

But Greek religious experience, being but part of universal religious experience, craved also Gods who gave help and guidance, and groped after the God who knew the meaning of the word "alas." The more fortunate and the more spiritual might, indeed, sustain themselves on the level of the Olympian worship and adore, for the sake of their sheer beauty and happiness, its splendid visions of that complete and perfected existence after which all men yearn. But to the less fortunate, and the less assured, to the simple and the ignorant, to the great mass of mankind on whom the injustice and imperfection of life bore more heavily and evoked a more naïve response, the presence of evil in the world was a more important and compelling fact than the vision of the Good. To them the prime function of religion was not to portray however nobly the Ideal, but to afford man relief and escape from his present sorrows and infirmities. Man might reverence from afar the sorrowless life of the august Olympians, but his immediate need was for salvation from his own imperfection. So it is that we find side by side with the Olympian cult, with its stress upon the perfection of the divine life, another religious movement, with its stress upon the imperfections of human life and responsive to the cry for redemption from evil.

This "religion of redemption" then, we shall naturally expect to find concerned with an attempt to devise a cure for evil and incidentally to explain its existence. Now the cure cannot be found simply in a reformation by man's unaided efforts of the conditions of his earthly existence. It is only the strong and fortunate, even among the virtuous, who can wring happiness from life by might and main. For the others "supernatural" and divine assistance is necessary. But again, the

cure is obviously not effected in this present life. The rain falls on the good and evil alike. The wicked prosper and the righteous are ground to the dust beneath their heel. The trust of the righteous must be then in a life after death where they may have reward for their merits, and rest from their labors.

Even so, however, the misery of this world is not explained. Evil here and now is not justified by the promise that in the future it will cease. But if we apply the idea of immortality to the past as well as the future, the existence of evil becomes more explicable. Not only will man live on after death and reap hereafter what he is sowing now, but he has lived before birth and is reaping now, by the workings of a law of moral cause and effect which the Buddhists call "Karma," the fruits of his sowing in past existence. His present misfortunes are then, but the wages of sin committed in former lives. Misery is an expiation of guilt. Thus the sense of immediate and burning injustice is removed, and man is shown to the satisfaction of his moral sense why he suffers as he does, and how eventually he may escape.

We shall not be surprised, then, to find that the tendencies in Greek religion which we are about to study gave a central place to the ideas of immortality and reincarnation. Nor shall we wonder when we see them seek to turn the hope of future existence and redemption from evil to a certainty by the worship of Gods who have actually suffered and splendidly triumphed over death.

It should be understood, however, that these cults did not arise in Greek religion suddenly without preparation and precedent. There is considerable evidence for believing that prior to Homer there had existed a worship of the dead and a belief in their power to harm or help the living, and certainly shortly after Homeric times the cultus was revived. In Hesiod again, who seems to occupy himself with the traditions and beliefs of the common people, we find such ideas as those of a degeneration and fall of man from an earlier Golden Age of happiness into his present misery; of a blessed immortality rewarding the virtues of the men of the long past happier time; of guardian angels mediating between God and man, protect-

ing the righteous and punishing the wicked; and, in the battle of the Gods and the Titans, of a dualistic conflict between powers of good and evil, order and disorder. Finally there was a persistence of the primitive cult of the fertility of the earth and her creatures. Men continued to worship the Life which in crop and vine and tree dies again and again in winter only to arise and rearise triumphantly in the spring, and in herd and flock and the race of man himself goes down into the dust with one generation only to reanimate the dust of the next. The means, then, of theologically formulating and supporting the yearning for redemption from evil and for life after death were at hand from the beginning in Greek religious experience.

VII

The two great movements which expressed in an articulate and organized form the rebellion against the imperfection, the mortality, and the finitude of man's lot, and fanned the hope of escape and peace in some life beyond the brief span of human existence, were the Eleusinian and the Orphic Mysteries.

The Eleusinian Mysteries centered about the story of Demeter and Persephone. Demeter, the earth-goddess, so runs as much of the story as concerns us, had been robbed of her daughter Persephone by Hades, God of the dead. Mourning and searching for her she wandered about the world, and meantime there was winter over the whole earth and the crops died and grew no more. Finally Zeus, touched by the plight of mankind who were like to die for want of food, prevailed on Hades to restore Persephone for a portion of the year. As often as Persephone returns from below and Demeter rejoices, it is spring and summer time. But when Persephone goes down again to Hades and the dead, and her mother mourns for her, the crops and fruits and trees die with her and it is winter again.

The connection of Eleusis with the myth came from the story that during her wandering Demeter, disguised as an old beggar, had been received kindly into the house of Celeus the king of Eleusis and made nurse to his son. She would have made the

child immortal by anointing him with ambrosia and laying him in the fire, had she not been surprised at her task by the terrified mother. Thereupon, revealing her godhead to the king, she bade him institute rites in her honor, and then went on her way. Out of these rites grew a local cult of Demeter and Persephone, which, after Eleusis in the Seventh Century B. C. had become Athenian territory, was made part of the established worship of Athens. Finally, as the importance of Athens increased, it came by the Sixth Century to assume a Pan-Hellenic significance, welcomed to its fold all who could call themselves Hellenes by race, and celebrated each year festivals to which the members came not only from all Hellas but from Asia Minor and Italy and Sicily and generally all parts of the Greek-born world. Other than the restriction of the cult to Greeks there seem to have been few bars to eligibility. Women and children as well as men could become members, and we are told that even slaves and prostitutes were numbered among the initiate.

The cult, however, formed a secret society with rites of initiation through which the candidate had to pass before he could assist at the Mysteries. To reveal the rites or Mysteries was an offense punishable, at least at Athens, by death. The tradition of the inviolability of the pledge to secrecy was so well maintained even in later and more free-thinking times that we have little more than indirect and obscure testimony as to the character of the Eleusinian "liturgy." [7] It is certain, however, that the ritual was divided into two parts, a ceremony of initiation followed by a celebration of the Mysteries proper at which the initiated assisted. The initiation seems to have included a period of instruction and preparation of the neophyte at Athens marked by fasting, and total abstinence from certain foods regarded as impure. There was a ceremonial purification through the efficacy both of holy water and of the cleansing blood of swine sacrificed by each candidate as a scapegoat for his impurity. Finally, the preparation involved a

[7] For an account of The Mysteries *Cf.* Foucart, *Mystères d' Eleusis.* Part III, Chaps. X-XV.

retreat from the world and from the dangers of ceremonial pollution which it offered.

The candidates thus purified were now ready to repair in procession to Eleusis where the initiation proper took place. This consisted of rites of further purification, and of communion with the Goddesses. The neophyte assisted at the sacrifice of sacred bulls and partook of their flesh. He fasted for a day in memory of Demeter's abstinence from all food and drink during the first nine days of her grieving for Persephone, and broke his fast by partaking of the mixture of meal and water with which the Goddess also had first quenched her thirst. He enacted a symbolical descent into the underworld commemorative of the descent of Persephone. He saw and handled various sacred objects connected with the story and the attributes of Demeter. And finally he received further instruction regarding the significance of the Mysteries and the benefits to be derived from them.

The actual celebration of the Mysteries which the initiate were at last permitted to behold was, so far as we can conjecture from the evidence, something like the mediæval miracle, and the modern Passion, play. There was a dramatic representation of the story of Demeter and Persephone by the priests of the cult, depicting the rape of Persephone by Hades, the grief, the wanderings, the search of Demeter, the restoration of Persephone, and the joyful reunion of Mother and Daughter. In addition there seems also to have been a representation of a marriage of Demeter with Zeus, and of the birth of a divine infant, symbol and promise of prosperity and happiness for the devotees of the Goddesses.

But although just what the Eleusinian initiate did and saw was a secret not to be divulged, there was complete publicity as to the object and benefits of the Mysteries. The sect promised and restricted to its members the enjoyment of a vivid and happy immortality. Thrice blessed he who had been initiated into these Mysteries, who had confessed his faith in Demeter and Persephone, associated himself with their sorrow and their joy, and assisted at the sacred spectacle of death and resurrection. By some mystical grace he was set apart

from his fellows, blessed by the special favor of the Goddesses on earth, redeemed by them from black nothingness or shadowy half-existence after death, and granted as a special privilege their gift of a bright and joyous after-life. Such an one not only rested from his labors, but perpetual light lightened him as well.

With the claim of the Eleusinian Mysteries to dispense and confine the gift of a life of felicity after death to its initiates, we are familiar enough in the uncertainty which Christianity has professed regarding the fate which may befall the non-Christian in a future existence, or the doubt which some Christian sects have entertained as to the character of the immortality conferred upon those without their immediate folds. In the case of the Mysteries, as in that of Christianity, the belief of the initiate that to him alone had been confided the secret of salvation and eternal life must have been an element of great strength in increasing both the inner self-assurance of the cult and its hold upon the popular imagination. The social and moral pressure exerted in excluding the "outsider" proved then as now a potent means of insuring cohesion and *esprit de corps* among the elect within. If we add to this the glamour which any secret society with a carefully guarded ceremony of initiation and a mystic ritual possesses both for its members and the world at large, we have at hand the bases of a powerful moral and religious organization.

From the Passion Play at Oberammergau, or some of the Holy Week processions in the Italian hill towns, or from the Mass with its highly symbolized but none the less splendid and dramatic presentation of God's perpetual sacrifice of himself for his creatures, we may get some idea of the impressiveness of the Eleusinian "liturgy." We can guess with what awe and spiritual exaltation the neophyte, admitted at last into the torch-lit darkness of the great temple, his emotions fanned and his imagination kindled by the solemn rites of initiation, must have beheld the sacred story, so full of meaning and promise for him, unfold itself before his eyes. He may well, like the early Christians, have felt the thrill of a new faith and a new hope to which men had hitherto been blind, that possessed

the power to save those who lived according to it, and to give to them a peace which the world could neither give nor take away.

The actual teaching of the Eleusinian Mysteries, however, was somewhat shallow and commonplace. It failed to give any distinctively moral value and function to the idea of immortality. The fortunes of the soul after death were determined not by moral character and deserts but by a formal relation to the Mysteries. The indispensable condition of reaching the Islands of the Blest lay not in being virtuous but in being an Eleusinian. The merit of the "noble heathen" availed him nothing. Faith without works sufficed for salvation. The benefit of initiation fell upon the righteous and unrighteous alike, the same happy existence beyond the grave awaited both.

There is no evidence again for supposing that the Eleusinian teaching pretended to any inner or higher significance, or sought, as Christianity has sought, to make of the divine death and resurrection not only a promise of immortality, but a parable of the moral life of man. Material benefits on earth as well as felicity in heaven were indeed promised the believer, but he was apparently not bidden to seek in the divine example of the Goddesses a meaning and a justification for the struggle and sacrifice and renunciation attendant upon his own daily existence. But it is hard to believe that among the many sorts and conditions of men, gathered from so many lands and cities, there were not some to whom the pathos and beauty of the story did not strike more deeply home, and carry the higher message, bringing insight and consolation and strength in sorrow, just as generation after generation of Christians have drawn understanding and peace amid the misfortune and pain and injustice of life from the story of the agony, the death, and the resurrection of their God.

So, too, the vision of the future life vouchsafed to the Eleusinian initiate was matter of fact and without suggestion of inner and higher meaning. It did no more than elaborate the pictures of that cloudless serenity of Olympus, and those amenities of the climate and scenery of the Islands of the Blest

set far in the golden west beyond the storm and tumult of the world, amid which the imagination of the poets at times loved to play. The souls of the redeemed wandered over flowery fields, by streams of living waters, beneath trees laden with delicious fruits. There were gentle breezes to fan them, golden sunshine to cheer them, thickets of myrtle for shade and repose. And amid the delights they sang and feasted, listened to the music of the heavenly choirs, and enjoyed philosophic converse with one another. In a word, the Eleusinian Mysteries offered to the believer the hope of escape and salvation in a heaven which differs only in some details of dress, custom, and landscape, from the Christian or the Mohammedan Paradise of the popular imagination.

VIII

The rebellion, however, of more "spiritual" natures against the imperfections of humanity and the burden of the flesh and the world is not to be put down, nor is their yearning for release and peace to be quieted, by such a vision of Paradise. At best, life eternal in such a heaven can only alleviate the earthly symptoms of imperfection. But it neither diagnoses the origin of evil, nor by destroying its root effects a radical cure. For the religious mystic the fundamental and significant symptom of the imperfection of human nature, which points directly to the cause of evil, lies in man's insatiable thirst for spiritual adventure, his growing hunger after new forms of experience indescribable and undreamed of, his fits of weeping for new and strange worlds of existence to conquer. Human nature is not content to be simply its own definite and specific self, even though that self be wholly perfected and completed. The very waters of Paradise would not suffice to quench its smouldering resentment against the limitation of individuality which makes us only ourselves and thwarts our yearning to burst through the spiritual skin of our own personalities and merge ourselves in the Life and Essence of the Universe. We should still cry out in heaven against the loneliness of being imprisoned in a particular nature and separated by its bars from

our fellow spirits and from God. But could we only break asunder the barriers of our separate individualities and embrace and unite ourselves with the All, then we should somehow know in an indescribable and mystical way that we had come into our own.

This mystical rebellion against individuality is not a rare or remote feeling confined to a few great saints and ascetics. In its less extreme forms it is a common everyday experience of most human beings. We all of us have moments when we are chafed and harassed by the complications and responsibilities of the daily grind of existence. Cities and civilization suddenly become hateful and we are haunted by the vision of the mountains and the sea. We long to close up, as it were, the great and pretentious and burdensome establishment of the higher centers of our brains and live, like God's humbler creatures, the simple, cottage life of the cerebellum and the spinal cord, where homely and straightforward instincts, reactions, and sensations attend on no less direct and homely wants, and nerves—good, honest, pleasant-faced, calloused nerves, with no airs—come in only by the day, and sleep out—and sleep deep—at night, after their simple daily tasks are done. All the inner complexity of consciousness, in a word, corresponding to the complexity of civilized life, seems simply to confuse experience for us and to stand in the way of that "simplification and self-surrender" in which, could we achieve it, we feel that we should find healing and relief.

So we spend our vacations in "getting back" to Nature, in detaching so far as may be the compelling and pitiless hand of daily life from our shoulders, and in escaping from the bustle and confusion and constraint of our ordinary surroundings. We go out in summer to cruise or camp. We put off the clothes and conventions and complexities of the daily grind. And we suddenly feel that in losing the everyday routine life, we are finding our real and essential life, and regaining, as it were, a birthright of which civilization has robbed us. We draw a long breath of relief, as we drop down the harbor or pitch our first camp, and say to ourselves, "This is the life."

The mysticism of the "man in the street," in many cases

perhaps, does not penetrate more deeply beneath the surface of things than this. But if he is also even unconsciously a poet, it may carry him a step further. It is not merely that "the hum of cities" has been discovered for the moment to be torture. Suddenly, as he goes overboard for his first dip, or opens his eyes the first morning upon the hill-tops edged with sunrise, he may feel, like Byron, that he lives not in himself but as a portion of a larger Life around him, and that "high mountains are a feeling," not really outside him but part of his deepest self. He is one in some mysterious way with sea and sky and land, with hill and valley and stream. And yet as long as he is shut away from them by the barrier of his particular body, and their hidden spirits are barred off from his own by their separate existence, that unity remains unrealized. Could this too solid flesh but melt and thaw, or could this soul "be changed into little water-drops and fall into the ocean," perhaps he and they might meet and merge. Or might there not be some deeper form of existence in which all of them including himself were soluble? Might it not be possible for us all alike to render up the separate natures and individualities which keep us apart, and disappear together, dissolved and dissipated in this profounder reality, as all the many shapes and colors of clouds at sunset withdraw and dissolve into the empty and transparent air which is their true home and substance?

If now we translate this feeling from the language of poetry into that of ethics and religion, there can be no mistaking the message it bears to the devout and aspiring spirit. It reveals to him the secret of man's sin and imperfection, and the way of his salvation. This yearning to embrace and become the All, to lose and dissolve himself and the separate natures of all other things in the absolute simplicity of some deeper form of being, is to the mystic no vain flight of the poet's fancy. It is rather the most important and significant phase of our experience. It is the homing instinct of the soul, guiding her unerringly through the trackless vacuity of the manifold world with all its swirling confusion of a myriad phantom forms and things, back to the undivided unity and calm of

God, there to yield up her distraught and restless individuality and forget her separate self and the separate selves of all other things in him.

So, too, the existence of many natures and things in their difference and isolation from one another is no mere innocuous restraint upon the all-embracing imagination of the poet, to be bewailed in melodious verse. It is rather the shadow of a spiritual death upon our life, the evidence of metaphysical catastrophe, of some degeneration and fall of the divine Unity from its original simplicity and peace into the great restlessness of a world caged in space and time and multiplicity. Or it is at least the sign of some monstrous deformity of our vision which makes us see what is really One as if it were Many, what is really perfect as if it were imperfect. That the world is not God, or at any rate seems to be not God but a thing apart from God, all shivered by its fall from the divine into a thousand individual fragments; in fine that the world exists at all—that is the primal evil, the original sin, the source of all the sufferings of the world. For how can that which is not God be wholly good?

The way of salvation is now plain. Redemption is to be found by overcoming this difference of ourselves from God, and regaining in ourselves that identity with God which is the lost birthright of the entire world. But in order to regain oneness with the divine, we must lose the whole world of our everyday experience. For in that experience, to whatever extent we order and simplify it by reason, there are always many things, forms, natures, laws, atoms, molecules or what not, and always the fatal distinction between ourselves and the objects of our thought. Even were all the complexity of the external world reduced to the movements of a single atom, I should still be different from it, the outside observer of its lonely flight through space. I must then discard all known forms and categories of my experience as means of access to God. He cannot be perceived, or known, or even felt, for in all these experiences there is present at least the distinction between the perceiver or feeler and what he perceives or feels. Only in some indescribable, ecstatic state of being of which the ordi-

nary forms of our consciousness give us no hint can the soul lose herself and find salvation and become God.

For the mystic, then, a heaven painted in terms of earthly experience, however purified and idealized, is as unsatisfactory as that experience itself. The soul still retains her separate personality, and moves amid variety and multiplicity, however splendid. Even the higher Christian notion of Paradise as the Beatific Vision in which the soul is intent upon God and God alone, falls short of the mystic mark. For again, though the soul sees God and God only, and is flooded with his Presence, she retains her individuality and is still herself and not the object of her vision, forever separated from him by her finite and created character. Not till that last enemy is overcome and God is all in all, and she is no longer herself but God himself, will the thoroughgoing mystic allow that she has fulfilled her destiny.

Hence the Eleusinian Mysteries, appropriate as their doctrine and liturgy were to the development of mystical feeling, failed to meet the extreme demand of mysticism, just as they failed to make the story of Demeter and Persephone a symbol and interpretation of the deeper moral experiences, or to base even the promise of immortality on moral considerations. In the Orphic Mysteries, however, the yearning for redemption from evil, and the mystical desire to slough off not only the body but human personality and to melt the soul in God, received far more adequate expression.

## IX

As the Eleusinian Mysteries grew up about the story of Demeter and Persephone, so the Orphic cult focused the attention and devotion of its adherents upon the figure and story of Dionysus, the son of Zeus and Semele. Dionysus seems to have been originally a stranger God, brought down from the wild, northern "frontier" country of Thrace, and made at home among the still youthful and growing band of the Olympian deities. Like Demeter and Persephone he was a God of the fertility of the earth, of the harvest, of the trees, and

especially of the vine and the vintage and wine. Like Demeter and Persephone again, he was God not only of the living and fruitful earth, of spring and summer and autumn, but of the seeming death of all things in winter. He, too, died each year, and each year rose again triumphant over death.

The rites with which his worship was celebrated were originally primitive and barbaric. The priests of the cult were considered at times, when, through frenzied dancing, intoxication, and other orgiastic means, they had thrown themselves into a sort of trance, to be possessed by, and even to incarnate, the God. It seems possible that in early times the priest so possessed was sacrificed and even eaten. Later a sacred animal, a kid or a bull, supposed also to incarnate the God, was torn to pieces by the frenzied worshipers, who believed that by partaking of its flesh and blood they absorbed into themselves the strength and divinity of Dionysus himself.

As early as the Eighth Century, almost before the migration of the Ionians to Asia Minor, this cult seems to have penetrated Greece. There it spread with all the rapidity of any wave of religious enthusiasm and revival throughout Hellas proper and the Mediterranean coasts colonized by the Greeks. The reasons for its swift advance are not far to seek. Its ritual was one of exaltation and self-abandonment. The dancing, the drunkenness, the general excitement of "letting one's self go," seemed to liberate the believer for the time being from the commonplace, monotonous routine of daily life and to create within him a new self more powerful, more happy, more master of its world, more deeply living and glowing, than the ordinary, everyday self. The worshiper was a new person, was possessed by a superhuman, divine being. He had thrown off for the moment his humanity and was one with the divine, nay, was actually for a supreme and fleeting instant himself "very God of very God." And might it not be that after death, rising again with Dionysus, the moment would be made eternity and the devotee would find himself forever this diviner self?

By its contact with Greek civilization the grosser and more barbarous elements of the myth were refined away. But the fundamental spirit and appeal remained with their promise

of immortality, their new hope of transcending the limitations of human life, of casting off human nature altogether and becoming God, and their ritual of "omophagia," or communion with the God by partaking of the flesh and blood of the sacred animal. The frenzied dance and drunkenness persisted as a means of inducing the superhuman ecstasy and exaltation in which the possibility of escape from the ordinary world and the essential divinity of human nature were revealed. There seem also to have been rites commemorating the birth and the resurrection of Dionysus.

We do not need, I think, to insist upon the adaptability of such a cult to those needs of the "sick soul," self-convicted of sin and impurity, or of the mystic spirit aspiring to absorption in the Ineffable, which we have just discussed. We may pass at once to the elaboration of its doctrine and liturgy which we find among the Orphics.

Of the beginnings of the process of "moralizing" the worship of Dionysus and assigning to it an inner and spiritual significance we know nothing. Tradition has it that Orphism was introduced into Athens from Italy and Sicily in the middle of the Sixth Century B. C., and it seems probable that at that period it was already well developed in those countries. The Sixth Century, which was a period of general religious revival marked by a notable purification and moralization of the Olympian theology, and by the first philosophical speculations and systems, afforded fertile soil for the growth of the cult. Though never, like the Eleusinian Mysteries, made part of the established religion of the Athenian State, it spread with great rapidity, and by the Fifth Century had permeated and obtained a very considerable influence throughout the Greek world.

By this time the original myth of Dionysus had developed into a complicated theology. The origin of all things this theology left in doubt, calling it now Night, now Chaos, now Water and primitive Slime, now Time. The first steps by which the world evolved out of the basic element were left similarly vague. Eventually, in one version of the myth, from the union of Time and Necessity, in another, from that of

Chaos and Æther, there proceeded a gigantic egg from which there appeared a God variously called Zeus, Pan, or Phanes. But however they might call him, the Orphic cosmogonies were agreed that he was the World-All, the One Substance from which all things proceeded. From this God were now produced the later generations of deities in the "orthodox" order given by Hesiod: first Uranus and Gæa, who were overthrown and followed by Cronos and Rhea, who in their turn met a like fate at the hands of Zeus. When Zeus at length had subdued all things into himself, he devoured Phanes and so became himself all in all, the One from which all things proceed. Then he in his turn generated the Olympian dynasty and the present world. Last and mightiest of all his children, he begat by Persephone, Dionysus.

So much by way of introduction to the advent of Dionysus. The tendency of the teaching so far was, we see, pantheistic and mystical. God was the World-All. All things originally and fundamentally were one in him. Now for the divine story itself. To Dionysus in his childhood Zeus entrusted the dominion of the world. But Hera was jealous of the child of Persephone and at her instigation the Titans plotted his destruction. This they endeavored to accomplish by trickery. They gave him a mirror for a plaything and while he was gazing at his own reflection they fell upon and sought to kill him. He, seeking to escape, assumed one form after another, but finally in the shape of a bull was overcome by them, torn to pieces, and devoured. Only his heart was saved, and brought by Athene to Zeus.

Then Zeus ate the heart of the first Dionysus, and immediately begat by a human mother, Semele, the second Dionysus, Dionysus Zagreus. Semele begged to see her lover in all the majesty of his Godhead, and perished, consumed by the thunderbolt in which Zeus revealed himself to her. The unborn Dionysus, however, was saved, and transferred to the thigh of his father, from which he was eventually born. And he was again made Lord of the world.[8]

But the Titans Zeus blasted with a thunderbolt, and from

[8] Abel, *Fragmenta Orphica,* 190.

their ashes he made Man. And Man because he was made of the ashes of the Titans is sinful and imperfect; but because the ashes contained also the substance of Dionysus whom the Titans had devoured, there is also within him the spark and possibility of the divine. With the final establishment of Dionysus as Lord of the world and with the creation of Man the present world-period begins. The central interest now becomes the condition and destiny of Man. Man is imperfect, his life is beset with sin and misery, but he is haunted also by the hope of finding the way of salvation. To cherish and amplify this hope, and to show this way now became the chief business of Orphism.

The cause of human evils, and the cure for them were plain. The Neo-Platonic mystics of a later age saw in the episodes of the death of the first Dionysus—the reflection and consequent reduplication of his face in the mirror given him by the Titans as a plaything, his assumption of various shapes in his flight from his enemies, and the rending of him at their hands into a thousand pieces—a symbol of that emergence of the diversity and plurality of the phenomenal world from the absolute and unbroken unity of God, with which the origin of evil in their eyes was associated. We may doubt whether the Orphics themselves read the story in so abstract and metaphysical a manner. But certainly for them the evil in man had its roots in his inheritance from the Titans, and the moral conflict between the good and the evil within us was a struggle between the Titanic and Dionysiac elements, which repeated the struggle between the God and his enemies. And in that struggle the good, the Dionysus within us, was wounded and rent even as the God had been torn to pieces. Finally, the hope of salvation lay in the possibility of freeing the fragment of the divine imprisoned within us from the bonds and foes which kept it from its origin, and of reuniting it with its source, even as Dionysus had been saved and restored out of the death and mutilation which he had suffered at the hands of the powers of evil.

These bonds and foes, so far as human life is concerned, the Orphics found in the desires and experiences of the body. The

Titanic element was the physical, the flesh, the senses, and the "world" connected with them; the Dionysiac was the mind or soul. The body they likened to a prison or tomb in which the soul lay captive or buried. This dualistic opposition of soul to body, as the opposition of a principle of good to one of evil, stood in interesting contrast, as we have seen, to the general tenor of Greek ethics and religion. It cannot but remind us of St. Paul with his contrast, some centuries later, between the "Old Adam," "the burden of the flesh," "of the earth earthy" with the "new man," "the Lord from Heaven."

We may read here as we run the direct application, omitted by the Eleusinian Mysteries, of the episodes of the divine story to the incidents of moral experience. The myth of Dionysus became for the Orphic the warp and pattern of human life. He was taught that the situation with which he was confronted, the presence of evil in the world about him and in his own nature, was a result and as it were a prolongation of the agony of his God. So, too, the intermittent golden thread running athwart the warp of life, bright with the fitful hope of immortality and the fleeting radiance of good triumphant over evil, did but repeat again and again Dionysus' conquest over death, and reassure his worshipers that he reigned. Each Orphic initiate, then, might well have seen in the divine history the type and explanation of his own personal experiences of trial and shortcoming, success and content, and felt that in his humble way he too died and lived again daily with Dionysus; nay, that the moral struggle within him was in some mystical way actually part of the very struggle of the God against the Titans.

Thus a new glamour was imparted to experience. The moral became at the same time a romantic life. Temptation acquired grandeur, suffering took on dignity, while resistance, endurance, and victory revealed nothing less than the essential divinity of man. Attention, in a word, was concentrated upon man's situation in this world, and the moral life resolved itself into a conflict between two superhuman principles, one of good, the other of evil. Furthermore, the soul was sharply

distinguished from the body by a moral as well as a physical line of cleavage.

To such a point of view salvation and its appurtenances necessarily appeared much more complicated than they did to the Eleusinian. The latter showed no curiosity as to the nature or origin of the moral evil present in the world. Had we asked him to define and explain wrongdoing, he would probably have replied in the orthodox and objective way that it sprang from bad judgment due to a confused and deficient knowledge for the time being of what was really best. That the existence of sin presented a theological problem, or that its nature had a deeper significance, which might even affect the eligibility of candidates to the blessed immortality which his Mysteries promised, would not have occurred to him.

But the Orphic felt a theological curiosity and had formulated a theological doctrine regarding the origin of evil, and he prescribed his cure for it with reference to what he thought to be its cause. Sin was an organic not a functional disturbance of human nature. It was the symptom, not of an acquired short-sightedness of the soul removable by external means, but of a congenital blindness which no earthly means could cure. The soul was separated and estranged from God. Corrupted by the heritage of evil from the Titans, the mind's eye had lost its vision of the divine. Or to use another figure actually employed by the Orphic, the soul had drunk of the waters of Lethe and been drugged by them. She had forgotten her origin and goal.

Tainted by so mortal a disease, the soul could not hope to find health and restored vision and memory in any mere change of scene and climate in an Eleusinian Paradise, however bright the sun and spiced the breezes and luxurious the heavenly home. Indeed in such circumstances her lethargy and her blindness to her true destiny would only become more complete. Salvation could be found only in restoring her memory and vision of the divine, and in reuniting her with Dionysus, of whom, though laid low by the "star-flung thunderbolt" [9] of fate, she was still a fragment. In order to restore this sight

[9] Harrison, *Prolegomena to the Study of Greek Religion*, p. 669.

and recollection a mystical and supernatural change in the inner character and disposition of human nature must take place. The hereditary taint, the curse of the Titan, the burden of the flesh and the senses, must be sloughed off, and the soul appear at length in her true character as "the image of Dionysus," reënacting in the process of her salvation, as it were, the resurrection of the God.

Like the Eleusinian, and later the Christian, the Orphic was certain that this restoration of the soul to God was impossible without outside aid. The soul could not recover of her own native powers. Her taint was of supernatural origin, and demanded a supernatural cure. There must be a physician, a prescription, and a regimen. The nature of the cure and the methods of its administration were, the Orphic thought, known to his sect alone, and in this again he reminds us of the Christian and the Eleusinian. Only those initiated into his Mysteries could hope to be healed of that primal taint wherewith all humanity is infected, and regain their no less primal birthright of reunion with the divine. Those who rejected Dionysus must bear forever the burden of man's heritage from the Titans.

The Orphics, however, promised their initiates no such quick and easy access to Dionysus as did the Eleusinians to their Paradise. To cleanse the soul of the original sin inherited from the Titans, to restore her to the Gods, ready to "avow herself of their blessed race" [10] and be found worthy of acceptance in their sight, required a time and a discipline to which no determined end could safely be set. So it was that, like the Buddhists, the Orphics foresaw even for themselves an indefinite process of transmigration and reincarnation in which the soul was born again and again, reaping in each new life the fruits, bitter or sweet, of the degree of her adherence to Orphic precept and practice in former existences. And like the Buddhists again, they allowed their fancy to play with the disembodied interval which separated rebirth from death. They imagined the soul led to the underworld by Hermes to be judged. The uninitiated they saw lying in a

[10] *Cf.* Harrison, *op. cit.*, p. 669.

morass of mud waiting reincarnation. The initiates they pictured as enjoying greater or less felicity, or undergoing purgatorial cleansing according to the state of purity attained on earth. But these intervals, however bright, even though they were spent in an Eleusinian Paradise on the Islands of the Blest, were at the best only passing episodes along the way of salvation. They were but spokes of the "sorrowful, weary wheel" of birth and rebirth from which it was the desire and destiny of the soul to be gone. Only by breaking through the vicious circle of transmigration and reincarnation altogether could the soul attain enlightenment and rest eternally in Dionysus. Then and then only, having at last turned away from the well of Lethe and drunk of the living waters of Memory of her divine nature and oneness with Dionysus, could she hear the voice confirming her redemption, "Happy and Blessed One, Thou shalt be God instead of mortal."[11] "Thou art become God from Man."[12] It was the business of the Mysteries to teach man how to effect this escape. "This is what those who are initiated by Orpheus to Dionysus and Kore pray that they may attain—'To stop the Wheel and breathe once more from ill.'"[13]

The ritual of the Orphic is even more difficult to reconstruct than that of the Eleusinian Mysteries, so fragmentary are our data. But so far as we can make out, the neophytes performed various acts symbolical of their escape from the wheel of birth and rebirth, and of their union with Dionysus. They seem also to have enacted a dramatic representation of the death of Dionysus at the hands of the Titans, and to have partaken of the raw flesh and blood of a sacred animal representing and supposed to incarnate the god. And this "Omophagia" appears to have had the significance not only of a communion with the God, but of a mystical sacrifice repeating his death.

Along with the performance of these ceremonial acts by which the Orphic signalized and aided his renunciation of the world, the flesh, and the Titan, and sought to restore his soul

[11] Harrison, *op. cit.*, p. 669.
[12] Harrison, *op. cit.*, p. 662.
[13] Abel, *Fragmenta Orphica*, p. 226.

to her essential and original divinity, the sect also enjoined upon its members a special discipline of life appropriate to their theoretical retirement from the world. This discipline was supposedly but not onerously ascetic. It commanded, in addition apparently to the ordinary virtues, an abstention from animal food and an avoidance of certain vegetables and of certain materials for clothing which were especially associated by tradition or superstition with decay and death and therefore regarded as unclean.

So far as the relation of practice to precept is concerned, it is probable that in Orphism as in most religions the two were far from identical. Men lived up to its teachings in varying degree and were more or less faithful in the observance of their religious duties, according to circumstance and temperament. Still it must be remembered that Orphism was a "dissenting" sect; that is, that it was not incorporated, as were the Eleusinian Mysteries, in the worship established and supported by the Athenian state. It was rather a protestant movement actuated by a new hope and vision which it considered more complete than that afforded by the established religion. Its adherents, then, may well have shown that greater enthusiasm and strictness in practice which are apt to mark reformed sects and produce what we call the "nonconformist conscience."

We must not, however, infer from the fact that Orphism was never recognized as part of the established worship of the Olympian gods, that it was therefore considered heretical. Heresy was a concept absent from Greek religious thought. The richness and fluidity of Greek theology naturally lent itself to all sorts of special cults. Worship might be concentrated upon the person of any one God, provided only the existence of the others was recognized and their divinity honored. Moreover, the worship of Dionysus was widespread and fervent at Athens, and his festivals played an important part in the state ritual. If some people wished also to find in the episodes of his life a mystical inner and universal significance and draw from them the hope of a mysterious salvation in the next world and the sanction of a peculiar and semi-ascetic life in

this, it was after all their own affair. And on its side, Orphism had no quarrel with the Olympian theology, which it accepted as a background to its particular cult. In the same way the Christian to-day may with perfect orthodoxy display a special devotion to one Person of the Trinity or the Blessed Virgin or some Saint, in meditation upon whose attributes or life he finds a source of courage and consolation suited to his individual needs.

Still, the Orphic undoubtedly came in for his share of the suspicion and contempt with which "dissenters" and "nonconformists" are apt to be regarded by members of an established communion. His doctrines, if still within the pale of orthodox belief, were none the less eccentric and extravagant, and ran counter to the traditional view of human life and destiny handed down from Homer and the sages. That view, as we have seen, contrasted the human and the divine estate, and had shown to the Greek again and again the line forever drawn between the mutability and mortality of his life and happiness and the untroubled and deathless felicity of the blessed Gods in which there was neither any change nor shadow of turning. Preacher and poet had warned him not only against seeking to overstep that line, but against excess of even such prosperity as is permitted to men, lest very great good fortune seem to exalt him too close to the jealous skies or to engender within him that blindness to his own frailties which is the root of all evil. Seek not to be God; seek not to be other than mere man, or more than mortal. Know the position in the Universe to which it has pleased the Gods to call men and man, and be submissive to its limitations. In obedience to such precepts and to the caution, moderation, and controlled aspiration which they inculcated, lay the way of wisdom and virtue. To a disregard of them, to a vain seeking to trespass beyond the reasonable bounds imposed upon the individual man, and mankind in general, the manifold paths of folly and sin might all be traced.

But here was a speculation which ignored, or rather defied, these maxims, and audaciously claimed that what seemed to wisdom the reasonable and generous bounds accorded human

nature were in reality intolerable and cramping bonds. Here was a teaching which found in aspiration beyond the limitations of our nature the very breath of life for conduct and religion, and held before all men alike the vision of a destiny mightier than human, nay, even the obliteration in the end of the distinction between the human and the divine. At the old, wise warning "seek not to be God . . . mortal things befit a mortal," so expressive of the balance and the aversion from excess which we regard as typical of the Greek point of view, it flung the challenge of its startling message, "Happy and Wise One, thou shalt be God instead of Mortal." "Thou art become God from Man."

Doubtless, too, the ritual like the claims and promises of the sect appeared extravagant and sensational, and made much the same impression upon the adherent of the established forms of worship, as the Oxford movement and High Church practices made upon the rank and file of the Church of England, or to use a more extreme example, as revival and camp meetings to-day make upon the typical Bostonian. Euripides is perhaps expressing the attitude not only of the free-thinking, but of the orthodox Athenian in the "fling" at Orphism in Theseus' bitter reproach of the apparent treachery of his son, in the "Hippolytus":

> "Now is thy day! Now vaunt thee; thou so pure
> No flesh of life may pass thy lips! Now lure
> Fools after thee; call Orpheus King and Lord;
> Make ecstasies and wonders! Thumb thine hoard
> Of ancient scrolls and ghostly mysteries. . . ." [14]

Still Orphism does not seem to have perturbed the Athenian Church to anything like the degree that the High Church movement shook the Anglican.

However, it must be admitted that by the beginning of the Fourth Century Orphism had been badly infected with really serious abuses. The lines just quoted from the "Hippolytus" may, then, be not so much a casual fling against eccentricity and sensationalism as a well founded protest on Euripides' part

[14] II, 952 *seq.* (trans. Murray).

against tendencies towards corruption already developing or developed in his day. The ritual and dogma of the sect were only too apt to degenerate into a highly scented and vulgar formalism, lacking not only in inward warmth and sincerity of religious feeling, but also in the outward dignity and restraint which characterized even such a picturesque rite of the established church as the celebration of the Eleusinian Mysteries. Worse still, they invited to superstitious beliefs and practices of all sorts, like magic and divination, the purchase of indulgences, and the hawking of absolution and salvation. The result was, that, though nothing could dim the splendor and the consolation of its promise to the "sick" and yearning soul, or cool the fascination which its doctrines of reincarnation, redemption, and reunion with the divine, exercised over a mind like Plato's, Orphism also became a rallying point for a host of religious quacks, and malpractitioners whose wares have a familiar look even to-day.[15] These hangers-on ran on about Dionysus' name talking a clap-trap designed to entice or frighten the simple and the credulous into a kind of spiritual "confidence-game." They told fortunes, practised divination, and offered even to rid you of your enemies through absent treatment by incantation; all, of course, for a consideration. Furthermore, they rattled the keys of heaven and hell in a truly impressive and terrifying manner. They would come to your door, particularly if you happened to be rich, carrying a prodigious lot of old books purporting to have been written by Orpheus himself. They would descant upon the horrors of hell-fire, from which they assured you only their charms and rites could save you, and, thumbing their "hoard of ancient scrolls and ghostly mysteries," they would do their best to frighten you into buying, cash down, plenary absolutions for all your own and your ancestors' sins in this world, and infallible prescriptions guaranteeing a general immunity from purgatorial pains, and the enjoyment of everlasting felicity in the next. And the pictures which they drew of the fate awaiting the rash man who refused to hand over an initiation fee, were doubtless vivid, and if you happened to be a bit uneasy in your

[15] *Cf.* Heracleitus, Fr. 124.

own mind about the world to come, convincing. However that may be, these salvation-mongers seem to have carried on a brisk and lucrative trade, even among the well-to-do, though their profits, as may be imagined, did not improve the credit of Orphism with less superstitious and better balanced people.[16]

The influence of the Orphic mysteries on philosophy was considerable. We shall find them looming large in the teachings of the Pythagoreans and Empedocles, and perhaps coloring to some extent the systems of Heracleitus and the Eleatics. Later on Socrates and Plato drew upon them for their visions of the immortality of the soul. And in the mystical Neo-Pythagorean and Neo-Platonist movements, which gained such headway in the first centuries of the Christian era, they came into their own again.

## X

The apparent ease with which Orphism escaped with nothing worse than a charge of sensationalism and vulgarity is perhaps but an expression of the same point of view as permitted the extraordinary freedom of Greek philosophic speculation from religious restrictions. We to-day wonder that by virtue of its mere acceptance of the Olympian theology as a background to its special teaching, Orphism was able without serious protest and censure to paint so unconventional a picture of subjects like the nature and destiny of man and his relation to God, which for us stand in the foreground of importance and may not appear before the public at large unless in orthodox guise. So, too, we might wonder again and again, when we come to trace the development of Greek thought, that contemporary theology so seldom felt shocked and demoralized at the picture drawn by philosophic speculation. When Thales, for example, announced that in his opinion all things were made of water, or Anaximenes proclaimed that they were nothing but condensed or rarefied air, we should not unnaturally expect theology to feel that its gods were being evaporated or dissolved, and to fight such destructive teaching

[16] *Cf.* Plato, *Republic,* II, 364 *C et seq.* Legge, *Forerunners and Rivals of Christianity,* I, p. 140. Campbell, *Religion in Greek Literature,* p. 254.

with might and main. That, when confronted with Orphic doctrines or philosophic speculations, religion showed no fear throws the relations of religion to philosophy and science in Greece into interesting contrast with the modern situation.

The reason, however, for the difference is not far to seek. Philosophy did not come into conflict with established belief for the same reason that Orphism escaped collision with it. The matters with which philosophy, like those with which Orphism, was mainly concerned were points of little or no concern to "orthodox" belief. Such questions as the origin, the composition, and the constitution of the Universe, which modern theology finds of great moment and has answered with an authority and finality based upon divine revelation, were from the point of view of Greek religion mere fields for conjecture, upon which opinions might take different paths and arrive at different conclusions without trespass or prosecution for damage done to any revealed truth. Provided only a man believed in the accepted Gods, or at least did not deny their existence, he could speculate at will and hold any opinion he chose as to what stuff they were made of, or how they originated and developed into the beings they now are. If Thales was right, the Gods like everything else were made of water, if Anaximenes, of air, but a God was a God, just as a man was a man "for a' that." What they were made of, or how they were produced out of the primal World-Stuff made no difference to their existence or their divinity. These were interesting and inevitable questions, like those discussed by the Orphics, but they raised no point of concern to the established cult and could be answered in diametrically opposed but equally orthodox ways.

Moreover, it is perhaps too much to insist even on the necessity of belief in the Olympian Gods. Certainly in Sicily, as early as the Sixth Century, the philosopher Xenophanes rejected undisturbed the conventional polytheism and taught that the divine nature was not collected and focussed in the persons of different Gods, but was suffused and omnipresent throughout the entire Universe. At Athens, however, the case was different. The Athenians were conservative in temper in all per-

taining to the state religion, and Anaxagoras in the Fourth Century was accused of impiety for maintaining that the sun was not a God but a lump of red-hot iron "larger than the Peloponnesus." Socrates, too, was condemned to death, a few years later on the charge, among others, of denying the Gods which the city worshiped.

However that may be, and even granting Athenian conservatism, it must be obvious how favorable was the atmosphere of Greek religion to the development of philosophic speculation. Religion was first in the field, to be sure, and philosophy had to recognize and reckon with it. But its influence was that of suggestion as to what might be believed, not of dictation as to what must be accepted. It did not claim, like Judaism and Christianity and Mohammedanism, a revealed and final knowledge of all that is important in the constitution of the Universe and the destiny of man, and bar from free philosophic discussion and conclusion most points of philosophic interest. It was opinion with no higher authority than that of tradition, most of which could be discarded or remolded by philosophy without offense to the religious interest. There were no trespass signs bidding the adventurous thinker beware the dogmas of a revealed truth, no stiles of scripture and creed to keep the traveler to one only permitted path.

The rise of ancient philosophy, then, is almost unembittered by that conflict with theology which has marked the growth of modern thought. Speculation could develop openly without resort to subterfuge and equivocation in order to escape active persecution, and without incurring the modern penalty of ostracism and defamation at the hands of established cults. For where the modern man feels his faith shocked and shaken, the Greek felt only his curiosity gratified and his knowledge enlarged, using, as it were, for walking and advancing, the toes which in us exist only to be trodden upon.

## XI

We have now hastily and partially surveyed certain features of Greek religion which we shall find reflected from time to

time in varying degree in the history of Greek philosophy. We have noted similarities and differences to the religious beliefs and practices of to-day. The background of all Greek religious experience was, we saw, much more objective and external than the point of view to which we are accustomed. The Hellenic mind was less self-conscious, less introspective, less isolated from the world about it than our own. It dwelt less upon itself and contrasted its spirituality less sharply with the experience forced upon it by the instincts and senses of a "physical" body and a material world. The Greek language, indeed, lacked any adequate terms for expressing the ideas of "self" and "personality," "conscience" and "duty" which so distress modern religion and philosophy. Indeed, we might say that, in its dominant mood at least, the Hellenic genius never burdened the body and the natural life and self-expression of man with an alien "spirit" to crush its roots, pinch its growth, and wither its flowering.

Again, just as the Greek did not set himself over against an external, "material" world, so he did not distinguish sharply things from persons. All bodies were living like his own, all natural phenomena were essentially beings like himself. The Universe was conceived as fundamentally a city-state, a constitutionally governed society of living beings, including Gods and men, whose character, relations, and rules of conduct could be inferred from human nature.

He naturally sought, then, his Gods in the external Universe rather than in the recesses of an inner, private experience remote from the world, and found them to be like men, children of the same World-Order and evolution, citizens of the same commonwealth, co-actors in the same drama, elder brothers of the same family. They, too, had grown in wisdom and goodness. The Universe, like human society, had developed out of primitive savagery into law and order and civilization. Being part of this larger order, the creatures rather than the creators of Nature, their omnipotence was limited and their omniscience reserved to such power and knowledge as enabled them to play their parts as constitutional rulers of the world. In all this, we pointed out, there is a great contrast to the

Christian idea of God as the absolute Creator and arbitrary Ruler of the Universe.

Emerging from the common background we observed two tendencies of thought. On the one hand we had the Olympian worship, on the other a "religion of redemption." The cult of the Olympians became more and more a worship of Beings who led that easy and deathless, liberated and perfected human life towards which man aspires and struggles, and protected such order, civilization, and happiness as social and political institutions had attained.

Along with this "established" worship of the Olympians went the traditional attitude of Greek ethics. The Universe had allotted Gods and men alike their places and their limitations. Virtue lay in each man's keeping to his place; the root of evil, in his tendency to trespass upon his neighbor's, be that neighbor human or divine. The difference between virtue and vice was purely quantitative, since the excess which led a man to overstep the bounds was but an exuberance of the instincts and activities which kept him interested and busy in developing his own lot in life.

From this point of view there was no moral opposition of the flesh to the spirit, of the "natural" man to a hostile soul of supernatural origin and destiny. Sin had its root in a man's ignorance of the bounds set to his individual lot and to human nature, not in an inner disobedience to the will of God which corrupted and stained a spiritual essence. Similarly the compensation exacted by the sense of fitness and balance inherent in the Universe was sufficient to clear the sinner's account and start him anew. He needed no inner absolution from God.

Here again we found a great antithesis to Christian teaching, particularly in its ascetic and puritan form, with its fear of the natural man, its suspicion of beauty, its horror of physical pleasure, and its feeling that the body and the material world obstruct and endanger the happiness and salvation of man. From the Christian point of view the essence of sin lay in the harm it did the sinner; from the Greek point of view, as might be expected from the greater objectivity and

lack of self-consciousness of the Hellenic mind, it lay rather in the hurt it might do to others.

The general background and "orthodox" Olympian tendency in Greek religious experience had, as we also pointed out, a strong echo in Greek philosophy. They were associated with the tardiness with which Hellenic thought distinguished natural from moral law, and consciousness from matter, and they inspired such typical expressions of Greek ethics as Socrates' dictum that "virtue is knowledge," and the Aristotelian doctrine of virtue as a golden mean between excess and deficiency.

But we discovered that beneath this serene and sunny stream of Greek naturalism, there swept a darker counter-current of religious experience. It was not enough to worship Perfection and build slowly towards it generation after generation. Those whose lot was less easy, who were harassed or overwhelmed with temptation and failure and sorrow, cried out for justice and redemption. And since salvation and happiness could not be attained in this life, they looked for it in the next. The ideas of immortality and reincarnation, which Olympianism ignored, were seized upon and developed. The accent of worship was shifted from the God whose perfection was lifted clear of human suffering, to the God who had suffered and died like ourselves, and whose resurrection might seem to hold out to humanity the promise of an ultimate triumph over death and redemption from evil.

The material to feed these longings was found in the ancient cults of the infinite life and fertility of Nature, which seemed to perish in winter only to be revived again in the spring, and whose animal forms appeared, by the recurrence of their generation, birth, and death, now to deplete, now to restore, the level of an inexhaustible, hidden reservoir of existence. In particular the "religion of redemption" seized upon the cults of Demeter and Persephone, and of Dionysus.

About the first, which later became part of the established church of Athens, centered the hope of a happy immortality of the ordinary Christian or Mohammedan sort. The Orphic Mysteries, however, of wild Thracian origin and orgiastic ritual, developed a complicated theology in which the ideas of

reincarnation and reabsorption into the Godhead played a prominent part, and a dualistic opposition of the soul to the body was a prominent feature. To this cult rallied all that was ascetic, puritanical, and mystical in the Greek temperament.

The ethics of such a movement were naturally out of harmony with the dominant mood of Greek morality. They urged man to seek self-realization and happiness, not by a balanced development of the resources of the natural man within the limits of finite human nature, but by breaking the attachment of the soul to the body, stopping the wheel of birth and rebirth, transcending the human lot, and becoming God instead of mortal. And to this end they prescribed a semiascetic discipline. They could not, however, push the Greek genius to the extremes of Pauline Christianity, or imbue with our modern Puritanism its natural joy in living, its satisfaction in exercising the activities of the body, and its pleasure in the physical beauty of the world.

Orphism, however, spread through the Greek world with great rapidity, and assumed the proportions of a great reforming and protestant movement. And it had considerable influence upon the development of Greek philosophy, to which we now turn.[17]

[17] A short bibliography for the further study of Greek religion is included in the Appendix to this volume.

## CHAPTER III

## THE SCHOOL OF MILETUS, THE FIRST PHILOSOPHERS

At the beginning of the Sixth Century B. C. there was no city on all the coast of Asia Minor which could compare with Miletus in strength and magnificence. Her foundation already lay in the immemorial past. Her traditions assigned her origin to Crete, and modern research has borne out her claim and traced her parentage to the great sea empire of Minos—thought by some to be the fabled Atlantis—which in the third and second millennium before Christ dominated the shores and islands of the Ægean. Later, when "the Princes of the Isles set in the Midst of the Great Green Sea" slept in their splendid tombs, and the ancient Minoan civilization had crumbled before the Greek invaders from the north into the ruins of cyclopean Tiryns and golden Mycenæ, the palace of the Double Axe at Cnossus, and the "topless towers of Ilium," Miletus, along with the rest of the coast as far north as Smyrna, passed into the hands of Ionian traders and explorers as they ventured eastward isle by isle from their lately won and settled possessions in Greece itself.

In time colonies grew up, united to their mother cities by ties of blood and family history and tradition, and to one another by the bonds of a common race, language, religion, and civilization. Among them, twelve, the so-called Ionian dodecapolis, were preëminent, and again of these the old Miletus, now newly colonized from Attica, was first in wealth and power.

The situation of these cities was, however, precarious from the start. Inland, the threat of the growing Lydian kingdom was becoming more and more ominous. The campaigns of Gyges, the founder of the Lydian power, had brought him into conflict with the coast colonies and had perhaps subdued

two of them, Colophon and Magnesia, to his rule. Under his successors, Ardys, Sadyattes, and Alyattes, the struggle and the process of slow subjugation continued, to be at length completed by Crœsus under whom the Lydian kingdom came to its height and its end. Miletus alone held out, though again and again her territories on the mainland were harried and the war was carried up to her very walls. Her successful resistance won for her at last a treaty of peace and a recognition of her independence from Alyattes, which were respected by Crœsus in his final conquest of the other cities of the coast.

Meantime Miletus, whilst preserving her independence on land prospered exceedingly by sea. A goodly share of the carrying trade between all known peoples was in her hands. Caravans freighted with the riches of the East wound down to her gates from the Asiatic "hinterland." Her ships sailed into her ample and sheltered harbor from the ends of the Mediterranean world. Through her busy port passed in ceaseless traffic the wealth of Egypt and the West, of the wild Euxine shores and Lydia, of Ormuz, and perhaps of Ind. She had her trading posts away to the south of the mouths of the Nile; her colonies she had established in the far north on the Black Sea coasts, in the shadow of Cimmerian darkness.

So Miletus grew rich. In her markets much gold was exchanged for wares, and wares for much gold, and much remained in the coffers of her merchants and traders. She was secure, for her walls had proved impregnable to her foes, and the sea with its inexhaustible resources of trade lay always free and open before her. She was active and energetic, for not only her commercial interests but at first the taste, and then the threat, of the ever-present Lydian danger kept her continually on the alert. She was cosmopolitan, for along with the stream of foreign commerce there must have poured through her streets a refluent tide of the men, the tongues, the fashions, the customs, and the ideas of all nations. In a word, not only did she possess the leisure which Aristotle, as we have seen, considered to be a prerequisite of philosophy, but her circumstances were such as to keep her outlook broad and her intelligence keen, and to turn an

ease which might have become mere intellectual lethargy into time and interest for reflection and speculation.

So much for the place where European philosophy was born. A word in passing as to the times. The Sixth Century was an epoch of ferment, political and social, moral, religious, and intellectual. The ancient monarchies such as Homer describes had given way in the various cities to government by aristocracy and oligarchy, and this in its turn was being challenged, often for a time successfully, by the growing Greek aspiration towards democracy and popular government. The age was one of revolution and counter-revolution. The lower classes would rise and overthrow the oligarchic governments, drive out the old noble families, and confiscate their property. The exiled aristocracy in its turn would await some favorable opportunity for return to power, repossess itself of the city, and repeat the process of exile, execution, and confiscation. Meantime the continual turmoil bred, in the ranks of the democracy itself, a host of adventurers and demagogues and *nouveaux richès* along with a sprinkling of true patriots, who, in one way or another, worked themselves forward to popular leadership. Thus, ironically enough, a whole hierarchy of social distinctions arose below stairs. Sometimes the richer or abler of these "self-made men" would "arrive," and succeed, as the poet Theognis complains, in marrying themselves, their sons, or their daughters, into the old nobility. And again members of the nobility would sometimes for profit or from principle espouse the cause and make themselves the tribunes of the people.

Such a state of affairs was apt to breed an interest in reflection upon the problems of government and society and human life in general. It was also likely to result in the establishment of despotisms. A man of daring and ability, declaring himself the champion of one or the other party and possessing the confidence of the army and the gratitude of the victorious faction, would not find it hard to possess himself also of the supreme power. So it is that the latter part of the Seventh Century and the Sixth are preëminently the age of "tyrants" in Greece—of Cypselus and Periander at Corinth, of the Peisis-

tratidæ at Athens, and of Thrasybulus at Miletus, to mention a few of the more famous. But the Hellenic love of liberty made the maintenance of these despotisms difficult, especially in Greece proper. Even if a man succeeded in retaining and in dying peacefully upon the throne which he had built for himself, his son was liable to come to a violent end along with the tyranny he had inherited. In the Greek cities on the Asiatic coast the idea of a despotism seems to have been less repugnant, and the despotisms were longer-lived. This was due perhaps to the proximity of the Lydian Empire and to familiarity with the glories of its capital, Sardis, and with the wealth of Crœsus which did not breed contempt for kings.

Whatever one may think of tyranny as a political expedient, it helped stimulate one of the most brilliant epochs of Greek civilization. The tyrants took pride in their cities. They promoted the economic interests of their states and worked for their material prosperity and aggrandizement. They kept peace and order as no aristocratic or democratic administration could. Socially, too, they improved in some ways upon both democracy and aristocracy. They prized dignity and magnificence, and admired and cherished both the refinement which the common man despises because he is incapable of it, and the talent which he disparages because it is more than average. At the same time they welcomed to their courts, as no old nobility would have received within its ranks, the gifted, the distinguished, and the brilliant, from whatever source derived.

By energy and unscrupulousness, and at times by oppressive taxation the tyrants amassed great riches. But however ill-gotten, their wealth was as a rule well-spent. They lavished it, to be sure, on themselves, their favorites, and their courts. But they also poured it out upon their cities, to make them more stately and more splendid. They built public works and buildings and temples, the latter for the first time in enduring stone. Over across the Ægean the Ionic, in Hellas proper the Doric, style sprang into being. Corinthian builders by first using tiles for roofing made the pitched roof with its triangular pediment possible. Temple and monument invited adornment with

the statues of Gods and heroes, and the blank spaces of the newly fashioned pediments welcomed more ambitious groups of sculpture, in which the great events of myth and history could be set forth.

Sculpture and buildings require architects and sculptors. The courts of the tyrants, like those of their "cousins," the Italian despots of the Renaissance two thousand years later, became the rendezvous of artists. But it was not only the compass and the chisel whose ingenuity was stimulated and exercised. The pen as well was encouraged to discover new subjects and invent new styles. To the old Homeric hexameter were added fresh measures and meters adapted to fresh uses—the lyric with all its many forms and possibilities, and the dithyramb evolved at Corinth out of the songs in honor of Dionysus and destined to play so important a part in the formation of Greek tragedy. Alcæus fought and drank in fact and verse, and "burning Sappho loved and sang," at the brilliant and luxurious court of the Penthelids in Lesbos. Archilochus urged on the Spartans with his war songs. And Solon and Theognis, though no friends of tyranny, were shining revelations of the splendor of its age.

As we have said, poetry found new subjects as well as new forms. The poet no longer, as in the epic, watched and recorded from a hidden post of observation another's adventures. He held the mirror to the face of his own inner thoughts and feelings. He had a sudden vision of human experience with all its instincts, its passions, its emotions, its vicissitudes, its perplexities and problems, its windings and gropings towards the light of happiness and perfection. He saw its inexhaustible variety and richness as something to be delved into and exploited and refashioned by his hand into beautiful and ideal shapes, which should reveal to man the meaning of his yearnings and beckon him to their fulfilment. The poets were the thinkers and the teachers of the age, and for a long time reflection upon life and even, as we shall see, sometimes philosophical speculation regarding the nature of the Universe, found poetry as well as prose a natural vehicle of expression.

It was inevitable that this contact with new peoples and this

flaming up of self-questioning and self-expression should fire also the scientific interest. From Phœnicia and Babylonia and Egypt, traders and travelers brought back novel ideas about measuring the courses of the stars and the surface of the earth, which acquainted the Greek spirit of investigation with astronomy, geometry, and mathematics, of a developed and scientific type. The reports of strange adventures and of sights and places far away inland or over the seas were mapped and ordered into geography. And observation of the teeming animal life by sea and land and air crystallized into an ordered biological curiosity.

Nor could Greek religion escape the general effervescence of such an age. The Sixth Century, as we saw in the last chapter, was the epoch of the rise and spread of the mystical flood of Orphism. It was also a period of disquiet and readjustment in the orthodox cult. The Homeric and Hesiodic Scriptures were weighed in the balance of new visions and ideals and were found wanting. The immorality, the caprice, the disunion of the Olympians were felt to be unworthy of divine natures. The Gods must be good. The misrepresentations of their behavior in the canonical myths must be passed over or explained away. Thus it is that at the end of the century we find the poet Stesichorus, the immediate forerunner of the great tragedians, "bowdlerizing" the canon and rewriting the Homeric and Hesiodic theology in a form more palatable to a nicer moral taste.

But the development of the idea of the divine righteousness and goodness had to encounter difficulties of its own making. The world-old problem of the existence of evil and the divorce of reward from merit was raised in an acute form. The reflective poetry of the age abounds in pessimistic thoughts upon the vanity and misery of human life, the futility of virtue, the prosperity of the wicked, and the sufferings of the just. Such reflection naturally bred doubts as to the moral government of the world and the goodness of the Gods who permitted so much misery and countenanced such injustice. Of the two great Gnomic poets, Solon contented his religious sense with asserting that the happiness of the wicked is but seeming and passing,

and with the doctrine, so familiar to us in the Old Testament, that the divine justice is satisfied by visiting the sins of the fathers on the children. But Theognis, who was a bitterer and more rebellious spirit, would have none of this explanation. He confronted great Zeus himself with the spectacle of the misfortunes of the righteous, asked him how any one beholding so sorry a sight could reverence the Gods, and boldly challenged the Father of Gods and men to justify his ways to men.

Faith, however, then as so many times since in the same ordeal, emerged from the test triumphant. The immediate outcome of these questionings was not skepticism but a purer religion. Theognis, himself, still believed in the righteousness of Zeus. The way was prepared both for the grandeur of Æschylus' vision of the eternal and unescapable Justice of God hounding the wicked to their doom, and turning even sin to a moral purpose, and for the Olympian serenity of Sophocles' confidence that all things are ordered by a divine Providence and happen for the best. The Gods were purified of the dross of natural forces and primitive instincts and refined into golden ideals embodying the ease, the happiness, the deathlessness of that perfected human life in a frictionless world, of which man dreams. Their very images turned from fetishes and symbols to statues alive with every grace and beauty of the human form. Their rude shrines gave way to temples, and their cults, increasingly controlled by the State, developed into stately and splendid ceremonials, constructed and enriched by all the genius of the architect and poet.[1]

In a word, we have in the Sixth Century B. C. in Greece a period which reminds us not a little of the Italian Renaissance. There were the same city-states ruled by the same despots, who, springing from like origins and availing themselves of like opportunities, had grasped their power by similar methods. And once in power these despots, like the Italians, proved themselves "culture-mad" rulers, endowed with a universal sensitiveness to life in all its many phases, loving beauty, encouraging art and science, and vying with one another in gathering at their brilliant courts the most gifted men of the age.

[1] *Cf.* Fairbanks, *Greek Religion,* pp. 237, 238.

Similar causes provoke similar results. At both epochs man was awakening to himself—to the possibilities of his body, his senses, his mind. The world, ever widening through trade and adventure, poured in upon him unaccustomed and startling impressions. His own nature suddenly hinted at resources, and incited to an exploitation, no less strange and delightful. It dawned upon him that he himself and his surroundings need not be accepted as they stood, but could be made to yield almost anything he wished. And at the same time his wants became articulate and his visions enlightening. He found that he could measure his mind with outer Nature, that he could understand and control her, making her the servant of his comfort and the slave of his desires. He discovered that he could invent new gratifications for his senses and new delights for his heart and mind. He knew himself to be, within limits, master of his fate. Life and the world lay before him like an uncut block of stone, calling him to test, unaided but confident, his own untried power, if perhaps he might turn them by his own cunning and forethought into a work of art more wonderful and more revealing than any temple or statue built by hands. The mutability of human affairs, to be sure, must forever thwart him. The shadow of mortality lay heavy upon him. The consummate ease of the deathless and ever-happy Gods was beyond his grasp. Still, if he willed and strove, it was in his power even within the short space which intervened between birth and death to make earth almost Olympus and himself a creature almost divine.

In Italy this awakening of man's insight into the possibilities of himself and of his world, and this arousing of his ambition to fulfil them, meant the recovery of the Greek spirit by a race fitted to be its heir. In the Sixth Century in Hellas it meant the Greek's discovery of his own supreme genius.

Thales, the first Greek philosopher, was born in the early part of this extraordinary epoch. His life spanned the greater part of a brilliant century, and all but outlasted the most splendid period of Milesian history. He was still alive just prior to the fall of Sardis and the collapse of the Lydian Kingdom before the onslaught of the Persians in 546 or 541 B. C.

Many stories are told of him, most of them apocryphal, which testify to that universality of interest and genius which was so characteristic of the age. He is said to have cornered the olive market, and effected a monopoly in olive-oil—for those days a feat of high finance. Again he appears as the prototype of "Johnny Head-in-Air" in the "Slovenly Peter" of our childhood, so given to star-gazing as to fall unwittingly into a well, even though it lay immediately beneath his nose. He is also reported to have accompanied Crœsus on the disastrous campaign against the Persians, and by his engineering skill to have diverted the river Halys from its course. More credible tradition has it that he introduced geometry to the Hellenic world, and that he predicted an eclipse of the sun which took place in 585 B. C. However that may be, he was certainly interested in mathematics and astronomy. In the world of politics he had the foresight to oppose the selfish, and in the end fatal, foreign policy of his city, which was to disentangle and isolate its interests from those of the other Ionian cities, to find the cause and objects of their struggle against a common danger of no concern to itself, and to let Lydia and later Persia take the hindermost one by one, till Miletus turned out to be the one in question. Thales, however, advocated not merely a Pan-Ionian Confederacy, but an actual Union in which each city should sacrifice its independence to a central federal government with a new capital, not at Miletus. This he perhaps thought better than the inevitable surrender of liberty to a foreign conqueror.

To these keen and varied interests Thales added the prying curiosity about the Universe in general, the flair for generalization, and the bold imagination which make him the starting point for European philosophy. The idea of the unity of the world, to be sure, had already dawned on the Greeks. They had long suspected that all things, in spite of their immense variety and confusion, might after all be only sides or aspects or derivatives of One Thing which underlay and expressed itself in them all. The old cosmogonies of the poets and theologians had pictured the evolution of the Universe from a single source like Night or Chaos. Again, at the center of the primitive

worship of the fertility of nature, which antedated the orthodox theology and lay at the root of the Orphic Mysteries, there lurked the feeling that all beings emerged from and expired into the same inexhaustible reservoir of Existence. Some writers, indeed, trace this suspicion that the whole Universe is made throughout of the same single stuff far back to a primitive tribal and social consciousness, more fundamental and more ancient than man's sense of the separate existence of individual persons and things.

But this idea of a single Substance underlying all things had heretofore never been reasoned out, nor had there been any attempt to argue a description of its nature based upon a methodical observation of phenomena. In a word, it had never been studied. Thales' claim to be the father of European philosophy lies just in the fact that he was the first to transfer the World-Stuff from the realm of poetry and mystical feeling and vague conjecture, and to make its existence and nature the subject of a "scientific" investigation and hypothesis. He seems to have looked the world over from head to foot, to have reflected upon what he saw, and in the light of his observations and reflections to have asked himself and answered to his own satisfaction, what this Substance was of which all things were made.

The solution to his problem he found in Water. Water was the World-Stuff to which all the variety and complexity of phenomena could be reduced. The clouds and heavenly bodies he imagined apparently as overhanging, and the earth as a flat disc floating upon, an ocean whose contents sustained, exhaled, and composed them. Even so we might picture to ourselves an ice-floe overhung with luminous mist and lying on the waters of which ice and vapor alike are made.

Thales may have been influenced in his conclusion by the old belief that all things originally sprang from Ocean, but he had also sound philosophic reasons for it. He had observed, so Aristotle and the later commentators tell us, that the seed of all animals is wet, that even all vegetable life requires moisture, and that the very fire of the sun and stars appears to draw water from the sea. Probably, too, he had in mind the fact to

which we have just referred, that water assumes beneath our eyes gaseous and solid forms so unlike its real liquid self that we should not guess their origin without experience of the transformation. After witnessing daily so radical and astonishing a change, it need not strain the philosopher's credulity or stretch his imagination to suppose a further alteration of water into the manifold and diverse kinds of solid bodies and all the various degrees of vapor from the thick storm clouds verging on liquid rain, or solid hail and snow, to the thin bright blue of the sky, or even the collected and focused luminousness of the sun and moon and stars.

How far Thales elaborated his theory, it is impossible to say with any certainty. Aristotle mentions a tradition which represents him as saying that all things are full of Gods, and that the loadstone has a soul because it moves iron. Later commentators drew from this the unwarranted inference that he believed in a divine mind permeating, animating, and controlling all things. This conclusion is undoubtedly quite false, but it seems reasonable to suppose that Thales regarded his World-Substance not as something in itself inert and in need of an outside force to move and direct it, but as something in which movement and life and development were always and naturally inherent. Or better still, we might say that just as Greek religion did not for a long time distinguish things from persons or the animate from the inanimate, so Greek philosophy did not at first discriminate between the ideas of matter and motion and force and life and consciousness, but left them all fused together in the as yet unanalyzed notion of the Something of which the world was made.

Anaximander, a pupil of Thales, was born about 610 B. C. He lived to see the fall of Sardis and the destruction of the Lydian Empire. Indeed, the publication of his book on philosophy, perhaps the first Greek work in prose, is said to have taken place in the same memorable year—546 B. C. Only fragments of this book have come down to us, but it was extant in the time of Aristotle. The exact date of his death is unknown.

Anaximander seems to have shared the universality of his

age and of his master. He evinced a profound and scientific interest in astronomy, geography, and biology, and drew the maps—the first in existence in the Western world—to illustrate the descriptions of his fellow-townsman, the geographer Hecatæus.

With the philosophical conclusions of his teacher the pupil was unable to agree. He asked the same simple and comprehensive question, and answered it also in a single word. But the word was different. Apparently he found water too specific, too wedded to its own nature and ways, in a word, too essentially watery, to be transformed without protest in fact and imagination into all the myriad things which water to all intents and purposes, save those of theory, so palpably is not. The Stuff of which all things are made must be something more versatile, more adaptable, more capable of throwing itself wholeheartedly and with utter self-effacement into its innumerable and absolutely different rôles and parts. Indeed, that one specific kind of thing should be the substance of which all other sorts of things are composed might well seem unreasonable. Only something which was no one thing in particular could turn itself with equal facility into anything and everything. And perhaps, too, he was struck with the way in which the confusion of things may be sorted out into pairs of opposites, and thought that Thales gave undue prominence to the wet and unduly disparaged the importance of the dry.[2]

However that may be, Anaximander refused to specify the nature of the World-Substance. It was simply something to which no particular character or limitations of any sort could be assigned. It was the Boundless, the Indeterminate. Being undefined and unbounded, it could be imagined without difficulty as assuming any shape whatsoever. Out of it all things arose and into it all things were resolved again without any alteration of its essential character.

In addition to the question, "What is the world made of?" Anaximander asks and attempts to answer a second question, "What is the process like by which the world is formed?"

2 Burnet, *Early Greek Philosophy*, 3rd ed., p. 54.

This problem he tries to solve somewhat as follows: There is an eternal motion in the Boundless, in the course of which pairs of opposites like hot and cold, wet and dry, light and darkness, become separated out from the indefinite substance. These opposites conflict with and suppress one another and are thus continually resolved again into the undifferentiated World-Substance. This happens, we are told, in a somewhat perplexing phrase, "as is ordained, for they give satisfaction and reparation to one another for their injustice according to the ordering of time." [3]

What does this passage mean? Is it, as the compiler who quotes it suggests, simply a poetic way of speaking? It may well be that Anaximander is merely remarking rather figuratively that as any one thing by monopolizing a certain amount of space and material keeps some other thing from existing, it only seems turn about and fair play for it eventually to step out and make room for something else in the crowded world. Or he may have the balance of opposites in mind, and the disturbance to the order and equilibrium of the Universe which would result if one member of a pair permanently triumphed over and suppressed its adversary. Again, he is not perhaps from his own point of view speaking figuratively and poetically at all. It may be that we are simply dealing with a philosophical example of that tendency, noted in the last chapter, to leave physical and moral law indistinguishable from one another, and to regard the behavior of things as controlled by the same considerations of propriety and equity as regulate the conduct of men.

Anaximander seems to have continued his description of the way in which the world arose, with considerable astronomical, geological, and biological detail. He believed apparently in the existence of other worlds besides our own. But whether he conceived the process of separation into opposites as occurring throughout the Indeterminate and Boundless Substance and thus giving rise simultaneously to an indefinite number of cosmic systems, or believed rather in an infinite succession

[3] Diels, *Vorsokratiker*, I. p. 15 (trans. Burnet).

of such systems, one after another, is a debatable point.[4] These worlds he also spoke of as Gods.

The manner in which a world-system was evolved he conceived as follows: The original opposition of the hot and the dry to the cold and the moist became, when once they were separated out, a ring of fire surrounding a core of cold and wet. In the course of the interaction between these two, earth, water, and air or vapor were differentiated within the core, while the enclosing fire became broken into three revolving hoops or rings, solar, lunar, and stellar. These rings were veneered with air or mist except at holes through which the fire shone out. The hole in the first is the sun, in the second the moon. The many perforations of the third are the stars. The earth itself is a cylinder on the top of which we live.

Anaximander's account of the origin of man is even more interesting. "Living creatures," he tells us, "arose from the moist element as it was evaporated by the sun[5] . . . each enclosed in a prickly bark. As they advanced in age, they came out upon the drier part. When the bark broke off, they survived for a short time."[6] Man himself "was born from animals of another species,"[7] and was "like a fish, in the beginning."[8] For had he been subject in the old days to his present disadvantages of a prolonged infancy and of inability immediately to forage for himself, he could never have survived primeval conditions.

It seems astonishing to find at the very outset of Greek thought a theory anticipating some of the most important conclusions and arguments of the modern doctrine of evolution, but it should be remembered that the idea of the development of all things out of less highly organized beginnings was, as we have pointed out, natural to the Greek mind, and that the notion of the fixity of species was a later development in ancient philosophy. And as for the doctrine of the special

4 The latter view is Zeller's, the former Mr. Burnet's.
5 Hipp. *Ref.* 1, 7 (trans. Burnet, *Early Greek Philosophy,* 3rd ed., p. 73).
6 Aet. v. 19, 4 (trans. Burnet, *loc. cit.*).
7 Ps.-Plut. *Strom.* fr. 2 (trans. Burnet, *loc. cit.*).
8 Hipp. *Ref.* 1, 6 (trans. Burnet, *loc. cit.*)

creation by fiat of the different kinds of animals, we remarked in the last chapter that it was quite foreign to Hellenic ways of thinking.

The third and last of the Milesian School was Anaximenes, a pupil of Anaximander's. Concerning his life we know almost nothing, save that he was younger than Anaximander and that his work and teaching must have been accomplished prior to the year 494 B. C. In that year the independence and importance of Miletus came to an end. Her rulers, not content with freedom from the Persian yoke, dreamed of new colonies and conquests. The tyrant Aristagoras had enlisted Persian aid in a scheme for the joint conquest of the islands of the southern Ægean. A quarrel broke out, the Persian commander played him false, and the plan fell through. Aristagoras, finding himself and his city discredited and suspected in the eyes of the Great King, made a desperate bid for self-preservation. He stirred up a general revolt of the Ionian cities, and enlisted the aid of Athens and of Eretria, a city on the island of Eubœa. At first things went well for the Greeks, and Sardis, the old Lydian capital, was taken. But the tide soon turned. The Greeks were defeated, and the Athenians returned home, having sown the wind which they were so soon to reap in the whirlwind of the two Persian invasions of Attica and the sack of Athens. The siege of Miletus, already begun, was now reinforced by a blockade by sea. Finally the city was taken by storm. Her philosophic preëminence was gone, along with the rest of her strength and splendor. Though the teachings of the School still continued to inspire and influence philosophic speculation in Ionia, the succession of great thinkers was at an end.

The writings of Anaximenes, however, survived the catastrophe and were known in later times. Only one direct quotation, however, has come down to us. But we can reconstruct his teachings, as in the case of Thales and Anaximander, from the reports of commentators. Like both his predecessors he asked what the Stuff was of which all things are composed, and like Anaximander he sought to discover by what sort of a process this Substance turns into all the variety of things

which go to make up the sensible, work-a-day world. He agreed, however, in his conclusions with neither Thales nor Anaximander. The World-Stuff, he thought, was Vapor or Air, the same stuff which we breathe in its invisible form and see quivering and shimmering, or thickening into mist, under the influence of heat and cold. Indeed, it seems as if this conclusion were suggested to him by his remarking the dependence of men and animals upon inbreathed air, just as Thales was led to adopt his theory by noticing the necessity and presence of moisture in all living things. Again, vapor could be detected in the act of becoming liquid as easily as water could be seen turning into mist, while in the dance and shimmer of rising heat it could be observed apparently transforming itself into light and fire. This Air or Vapor, though conceived as possessing a definite nature, was considered by Anaximenes to be boundless in extent like the Boundless of Anaximander. And like the Boundless it was naturally and always in motion. He called it also a God.

The process by which our world arose from the original World-Stuff was, Anaximenes believed, one of condensation and rarefaction. When Air "is dilated so as to be rarer, it becomes fire; while winds, on the other hand, are condensed Air. Cloud is formed from Air by 'felting'" (that is, by compression); "and this, still further condensed becomes water. Water, condensed still more, turns to earth; and when condensed as much as it can be, to stones." [9]

The result of this process of compression is a slab of solid material, which is our earth with all its different substances. This slab is very broad and is upheld by the air underneath it. The moisture rising from it produces the heavenly bodies "which are of a fiery nature," and "are supported by the air because of their breadth." [10] The sun and moon and the planets are discs of fire floating free; "the stars are fixed like nails in the crystalline vault of the heavens." [11] The orbits of

[9] Hipp. *Ref.* 1, 7 (trans. Burnet, *Early Greek Philosophy,* 3rd ed., p. 73.).
[10] Hipp. *Ref.* 1, 7 (trans. Burnet, *Early Greek Philosophy,* 3rd ed., pp. 75-76).
[11] Aet. 11, 14, 3 (trans. Burnet, *op. cit.,* p. 76).

the heavenly bodies do not carry them under the earth, as Anaximander supposed, "but round it, as a cap turns round our head. The sun is hidden from sight, not because it goes under the earth, but because it is concealed by the higher parts of the earth, and because its distance from us becomes greater." [12] The risings and settings of the moon and the other planets, and the various constellations were doubtless to be explained in the same way. The cosmic system thus evolved floats in the infinite Air from which it breathes in and draws its life and cohesion and organization, just as we are held together as organic beings by the air which, inhaled by us, becomes our soul and vital principle.

We need not follow Anaximenes into further astronomical and meteorological detail, and we may note in passing the apparent lack in his case of the biological speculation regarding the origin of animals and man which makes the system of Anaximander so interesting.

To us in retrospect it looks as if Anaximenes were trying with his theory of Air as the World-Substance to strike a compromise between the opinions of Thales and Anaximander. If Water seemed too specific and too set in its ways to turn itself easily into the great variety of objects which go to make up the world, the Boundless might well appear to be too vague, too vacant, too lacking in stuff and character, to be the substance of anything at all. Nothing in particular is not promising material for every sort of particular thing. The imagination, forced to leave it blank without definition or determination in the first place, finds difficulty in following and picturing its growth from mere blankness into the crowded and diversified and highly colored spectacle which existence presents. Anaximenes, however, might claim with some show of reason to have found a happy mean combining the good and discarding the bad points in the theories of his predecessors. Air was as infinite, as all-pervading, as pliable and supple and capable of all sorts of far-fetched contortions and transformations, as the Boundless. It had none of the heaviness, and stiffness, and solidity, which made it difficult to

[12] Hipp. *Ref.* 1, 7 (trans. Burnet, *op. cit.*, p. 76).

imagine Water in the act of assuming all kinds of shapes unlike its own and becoming all kinds of things different from itself. At the same time, unlike the Boundless, but like Water, it had a definite character which enabled one to get a grip on it. One could say what it was like, breathe it, feel it, often see it, and test by the senses its airy, mobile, and essentially changeable nature. Here, then, was something which was something in particular and could be named and described, and yet was capable, as it seemed to sense and imagination, of turning quickly and easily, without resistance or friction, into other things.

Anaximenes' theory regarding the process by which the One Substance gives rise to the variety and complexity on the surface of the world is also more definite than the statements of Anaximander. The latter had contented himself by saying vaguely that a separation and conflict of opposing qualities went on within the Indeterminate, but he did not tell us how either the separation or the conflict takes place. Anaximenes, on the other hand, points to an ordinary, everyday occurrence like condensation and rarefaction with which we are all familiar and tells us that this is what the whole World-Process is really like. We thus get a clear image of what goes on and are able to follow it in imagination when it is not apparent to perception.

Moreover, Anaximenes came very near to enunciating a cardinal principle of modern science. The success of science in helping us see through and understand the world is due to its reduction of all the differences and alterations of quality and nature in things to a mere difference and shifting of the place and spatial relations of similar and unchanging particles like atoms or ether vortices. And Anaximenes was on the verge of discovering this principle when he found that the diverse properties and characters of objects were nothing but different degrees of dilation or compression of one simple thing which had a single unalterable character and constant and unchangeable properties. But as it turned out it took another century of analysis and reflection to bring the scientific view to clear

and final expression in the philosophy of Leucippus and Democritus.

The astronomical speculations of Anaximenes, however, are not so much in line with later discovery as those of Anaximander. If Anaximander did not reach the point of declaring the earth a sphere, he at least took into account its possible thickness and made it cylindrical in shape, whereas Anaximenes never got beyond the popular belief that it was flat or displayed any interest in its shape so far as its depth was concerned. Similarly his theory that the sun and the moon and the planets were flat, leaf-like discs which circled round the earth horizontally, lacked the possibilities and suggestiveness of Anaximander's vision of hoops revolving in a more or less vertical plane about the earth and hiding beneath it, by night or day, the fiery orifices which are the heavenly bodies. Still, Anaximenes made a distinction, which Anaximander failed to grasp, between the planets and the heaven of fixed stars.

It is interesting thus to find European philosophy at its inception occupied with profound and central problems. To ask what the World is really like at heart, to seek what the Nature of Things really is, is for philosophy the commandment on which hangs all the law and the prophets. And the second is like unto it—to show by what process the everyday, phenomenal world issues from the World-Principle or Substance; or, in other words, why and how Reality manifests itself as it does and wears this particular familiar external expression and clothing rather than some other. Indeed, the second commandment has sometimes proved for philosophers, as for Christians, more difficult of observance than the first. It is much easier to extract a theory from facts than to reëxtract the facts from the theory. When we have reached the Principle which seems to account for our particular universe, we are frequently at a loss to see why it should not just as well develop into any one of many other sorts of worlds. The nature of Reality, whatever else it may be like, has something of the fly-trap about it. Many a thinker who has buzzed his way in complacently enough and settled, with convinced proboscis and wings folded in attainment, upon the Ultimate

Truth regarding the Real Constitution of Things, has exhibited less assurance and success when it came time to crawl painstakingly out again to the same data from which he started.

These two questions, then, What is the real Nature of Things? and, How does this Nature manage to become the things themselves and appear to us the world it does? which are the Alpha and Omega of philosophy, are explicitly raised by the Milesian School. And they are answered with a clearness, an understanding of the problem, and a power of generalization quite equal to our own. To us, to be sure, from our vantage point at the summit of nearly twenty-five centuries of further analysis and meditation, it may seem at first thought rather odd and primitive ever to have supposed that the Universe could be reduced to Water or Air or the Boundless and reëxtracted therefrom by a simple process of separation into opposites or of rarefaction and condensation. But a moment's reflection will convince us that in relation to the data upon which they were founded, these guesses were quite as reasonable as our own. We have not learned to think any more to the point or more profoundly. We have collected more data and sorted them out more carefully. We have invented more adequate means of cataloguing them. And we have made new attempts to organize them and to arrive at some comprehensive hypothesis regarding them, in the light of our more detailed analysis of the situation. But that is all.

We should remember also that we ourselves have not reached the summit of all thinking. If the centuries slope away behind and below us, they also stretch above us towards unknown peaks. The process of investigation, of collecting and sorting out and cataloguing, and of framing new hypotheses to fit new analyses and associations of data, has not come to an end. Twenty-five hundred years hence our present scientific and philosophic systems will doubtless seem as immature and unsophisticated as the speculations of the Milesians appear to us to-day. The recently propounded Einstein theory, for example, shows how complete a revolution may take place at any moment in our views regarding the nature of the physical

world. The philosophers of that distant future may perhaps find it quite odd and primitive, too, that we could ever have believed that the Universe was a Mechanism, or that it was governed by a moral Purpose. To them ether vortices, ions and electrons, or mind-stuff or souls or selves may seem as lacking in subtlety as Water does to us. And even the theory which has been so much in vogue that the world can be reduced to a flow of ideas in an Infinite Mind, or regarded as the Career and Experience of an Absolute Consciousness, may look to their eyes, for all we know to the contrary, like airy vaporing. It is better for us not to judge the past lest we, too, be judged by the future.

Various designations have been applied to the Milesian philosophers, and for that matter to the early Greek thinkers in general. They have been called "physicists," because they appeared to later critics to be describing Reality in purely physical or material terms. Again, they are sometimes referred to as "monists," because they regarded the world with all its different phenomena as reducible to a single, simple principle like Water or Air. And they are also termed "hylozoists" on account of their belief that the World-Stuff was of itself alive and in motion. There is no objection to these characterizations so long as we keep it in mind that they represent, not the earlier philosophers' opinions about themselves, but the judgment passed on them by their later critics and historians in the light of considerable development in the interim of analysis and speculation. To call the Milesian School "physicists" in our use of the word, for example, presupposes, if not an evolution of physics as a separate science which in their time had not yet taken place, at least a distinction of the notion of matter from that of form and law and life and soul, which it would never have occurred to them to make. In its earlier Greek sense, to be sure, they might have accepted the term, but then in its original meaning "physics" meant interest in the Nature of Things in general or philosophy. But, as we understand it, the designation would have had no significance for those to whom it was applied. In their own estimation they were not "physicists" but philosophers. Their prob-

lem was not what the physical side, as differentiated from the other aspects, of the Universe was like, but what the Universe as a whole, what Reality was like. When they spoke of Water, or the Indeterminate, or Air, they believed themselves to be describing not the nature of Matter as such, but the essence of the whole conglomerate mass—twisting and writhing, teeming with all sorts of forms, crawling with life, bubbling and bursting into passion and emotion and thought in human careers and history—which we call Existence.

Similarly to call them "hylozoists" is equally misleading. We apply it out of the knowledge that later on the concepts of Life and Consciousness and Matter were extricated from that of the World-Whole and divorced from one another, and that Matter came eventually in many systems to be regarded as in itself quite inert and dead. To many of us, indeed, it seems quite naïve and surprising that Matter ever should have been thought of as alive. But the Milesians would never have suspected that it could be regarded otherwise, supposing even that they had ever laid any special stress upon the solid and spatial aspects of the world and thus even approached the notion of Matter as such. In order to make the term "hylozoism" comprehensible and acceptable to them as a description of their views, we should have had to acquaint them with the future course which speculation was to take. The term "monist" is even more deceptive. It is a modern invention suggested by much sad experience of "dualistic" and "pluralistic" people who do not believe that the Universe is all of one piece and cut from the same cloth, but feel that it is a patchwork or even crazy quilt of at least two and very likely more eternally independent and irreducible principles. It contrasts the Milesian School with more recent theories, and is not a term which, without having studied the history of subsequent philosophy, the School could have applied to themselves. It is much safer then, it seems to me, to avoid such tags and to stick to the simple geographical designation which the Milesians themselves would have recognized.

The philosophic preëminence of Miletus came to an end, as we have seen, with the fall of the city into the hands of the

Persians. But Anaximenes and Anaximander had left pupils who kept the traditions and doctrines of the School alive. We shall later have occasion to note a reappearance of the Milesian teaching in a form modified by the new developments in philosophy to which we are about to turn. The revival, however, will prove a side-issue of little importance. The main currents of thought were destined to run in fresh channels through new lands.

But the Ionian cities had still to contribute two great thinkers, Xenophanes and Heracleitus, to the history of philosophy before its center of gravity shifted, first to the Greek settlements in Italy and Sicily, and then to Athens. The former, we may take up at once, as his exile at the age of twenty-five from his native city of Colophon, near Ephesus, and his emigration to Sicily symbolize the transplantation of philosophy from Ionia to Magna Grecia. He seems to have spent much of his life on the island, and was at the Court of Hiero, tyrant of Syracuse, whose reign lasted from 478 to 467 B. C. He lived to be over ninety-two years old. More exact dates in connection with his life and death it is impossible to establish.

There was considerable reaction at the end of the Sixth Century against the over-civilization and luxury of the age, and it has been suggested that Xenophanes is best understood in the light of this movement. It is certain that he had the spirit of a reformer. In the fragments preserved to us of the poem in which he gave vent to his philosophical and other opinions we find a sharp and very modern attack on the cult of the athletic hero and the sporting type to the neglect of brains and solid worth. And he inveighs against over-dressing and perfuming, and warns his readers against getting so drunk at dinner-parties that they are unable to get home alone, or allowing their conversation to degenerate into empty babble about the "battles of Titans or Giants and Centaurs."

But his chief claim to fame lies in his bold and unqualified attack upon the orthodox religious views of his day. It has the point, though it lacks the brevity and wit, of Voltaire's remark that if God created man in his own image man had returned the compliment.

"Homer and Hesiod," he tells us, "have ascribed to the gods all things that are a shame and a disgrace among mortals, stealings and adulteries and deceivings of one another. . . .

"But mortals deem that the gods are begotten as they are, and have clothes like theirs, and voice and form.

"Yes, and if oxen or lions had hands and could paint with their hands, and produce works of art as men do, horses would paint the forms of the gods like horses, and oxen like oxen, and make their bodies in the image of their several kinds.

"The Ethiopians make their gods black and snub-nosed; the Thracians say theirs have blue eyes and red hair."

The truth, so far as the truth in such matters can be ascertained, is that there is

"One god, the greatest among gods and men, neither in form like unto mortals nor in thought.

"He sees all over, thinks all over, and hears all over.

"But without toil he swayeth all things by the thought of his mind.

"And he abideth ever in the selfsame place, moving not at all; nor doth it befit him to go about now hither now thither." [13]

Until recently these verses were believed to indicate a belief in one God, as we to-day understand such a belief, and Xenophanes has been hailed by many modern historians of philosophy as the harbinger of a dawning monotheism. But this view is now generally discredited. Xenophanes more probably thought of his "one god the greatest among gods and men," abiding "ever in the same place, moving not at all" as merely the World-All, the Universe. He meant by it no more, nay even less, than did the Milesians by their World-Substance. For the Milesians reduced the variety of the world to manifestations of one principle, whereas Xenophanes, as we shall see in a moment, thought that there were two ultimate constituents, earth and water, of which all things were composed.

Incidentally it is also well to remember in connection with his application of the term "god" to the World-All, that Anaximenes, too, had said that the World-Substance was divine. And Anaximander had applied the term to the world-

[13] Trans. Burnet, *Early Greek Philosophy*, 3rd ed., pp. 119-120.

systems which he conceived to be differentiated out of the Boundless, while Thales, we may recollect, had said that "all things were full of gods."

So far then, Xenophanes seems to have made no advance over the speculations of his predecessors. The same is true when we consider such lines as "God sees all over, and hears all over," and "without toil he swayeth all things by the thought of his mind." Here, too, there is no reason to suppose that he had in mind anything very different from the view of the Milesian School. The world for him, as the World-Substance for them, was inherently full of motion and pregnant with life and consciousness, and was capable of evolving by its own innate powers into an everyday world of definite things and orderly processes, organic beings and reasoning minds. He is testifying not to a precocious monotheism, but is one more witness to that absence as yet in the Greek mind of any distinction of the ideas of matter and motion and life and consciousness from one another.

We have very little evidence as to how Xenophanes supposed different things to come into being within the World-All. He tells us that "we all are born of earth and water," that "all things are earth and water that come into being and grow," and furthermore that "the mighty sea is father of clouds and of winds and of rivers." He was interested, too, like Anaximander, in the depth of the earth and said that "below it reaches down without a limit." [14] Compared with the speculations of Anaximander and Anaximenes, these opinions seem superficial and perfunctory.

Indeed, it might be maintained that the really surprising and interesting thing about Xenophanes is not contained in his positive teaching at all. It lies rather in the boldness of his critical and destructive work, and in the fact that as early as the last part of the Sixth Century the established religious beliefs of the day could be with impunity so bluntly attacked and rejected. The moral sense, as we have already seen, was already aroused to the incompatibility of the theology of Homer and Hesiod with the newer vision of the ideal, and lib-

[14] Trans. Burnet, *Early Greek Philosophy*, 3rd ed., p. 120.

eral and free thinking, as well as reforming, tendencies were obviously abroad. Preparation was not only afoot both for a purified theology like that of the poet Æschylus, but also for a religious skepticism such as we shall find when we come to the teachings of the philosopher Protagoras.

Furthermore, there are in Xenophanes very interesting foreshadowings not only of religious agnosticism, but of the later philosophic skepticism. He quite frankly suspected the validity not only of the speculations of other philosophers, but even of his own theories. He recognized the obscurity and difficulty of the problem, and he felt that the answers he suggested were as tentative, and needed to be taken with as many grains of salt, as the solutions proposed by any one else. Philosophic "systems" in general were matters of conjecture rather than conviction, and his was simply one guess among others.

"Let these," he says, apparently referring to his own views, "be taken as fancies something like the truth. There never was nor will be a man who has a certain knowledge about the gods and about all the things I speak of. Even if he should chance to say the complete truth, yet he himself knows not that it is so. But all may have their fancy."[14a]

Taken all in all, then, Xenophanes in spite of his edifying start comes to rather a dubious end. If we were to try to label him with modern tags, we might say that he was a vaguely pantheistic sort of person with a strong tinge of agnosticism.

There is one more fragment of Xenophanes which may serve as a close to the present, and an introduction to the next chapter. "Now, however," it runs, "I come to another topic, and I will show the way. They say that once on a time when a hound was badly treated, a passer-by pitied him, and said, 'Stop beating him for it is the soul of a dear friend; I recognized him on hearing his voice.'"[15] This passage shows a familiarity with the belief in the Transmigration of Souls, which, as we have seen, was one of the central tenets of the

14a Frs. 35, 34 (trans. Burnet, *Early Greek Philosophers,* 3rd ed., p. 121).
15 Frs. 18 (trans. Fairbanks, *First Philosophers of Greece,* p. 70).

Orphics. It has been suggested that it is a deliberate hit at the philosopher Pythagoras, a contemporary of Xenophanes, who made much of the doctrine in his teachings. Let us then follow the way pointed out by Xenophanes and pass to another topic—the philosophy of the Pythagoreans.

## CHAPTER IV

## PYTHAGORAS AND THE PYTHAGOREANS

THERE is no figure in the history of philosophy so mysteriously shrouded in the phosphorescent mists of legend as the person of Pythagoras. Revered by his more immediate followers as a superior being, he acquired among later disciples the majesty of a demi-god. He was variously reputed to be the son of Apollo in his present existence, and to have been the child of Hermes in a prior incarnation.

Like the Bodhisattvas on the threshold of Nirvana and Buddhahood, he was said to possess through the grace of his parent, Hermes, the memory of all his past existences. As for his teachings, they were derived straight from his other father, Apollo, through the lips of the Delphic oracle. And it was reported that in the flesh he had descended into Hades. He was also credited with other scarcely less distant but more mundane journeyings which had acquainted him at first hand with all the lore of the Phœnicians, the Chaldeans, the Magi, the Hindoos, the Arabians, and the Egyptians.

It is highly improbable that, even in an age when supernatural fathers were plentiful and direct confabulation with the divine was frequent, a commonplace personality could have attracted to itself so many and so flattering legends. It is true that Pythagoras' own adherence to mystical beliefs and rites like those of the Orphics and the votaries of the Delian Apollo, made his exaltation by his followers almost a bit of routine. In them transmigration, the partial incarnation of the divine in human nature, and ecstatic union with the deity through mystical sacrament and ritual, were a matter of course. Still, the myth suggests that Pythagoras was a remarkable and distinguished man, and such historic fact as we can gather goes to bear out this assumption.

He was born at Samos, probably in the last half of the Sixth Century. His dislike of the rule of Polycrates, who became tyrant of Samos in 532 B. C., caused him to emigrate to southern Italy, where at Croton he gathered about him a company of disciples and formed them into a religious order. This Order soon became powerful and influential and, like many later religious foundations of which history readily reminds us, tried to take a hand in politics and interfere in the government of the state. The School became a target for political abuse and disorder, so much so that the Master himself had to leave Croton, and take refuge in the city of Metapontium, where he died. By the middle of the Fifth Century the political activities of the Pythagoreans had become so obnoxious that the opposition rose, burned their lodge or monastery, killed many of them, and drove out the rest. Thus the Order became diffused through Magna Græcia and Greece proper.

As we have said, the Pythagoreans were a religious community, drawing their inspiration and doctrine from the mystical side of Greek religion. Their interest centered in the purification and the redemption of the soul from the taint of the physical and the prison of the body, in her final release from the wheel of transmigration and rebirth, and her reunion with the Divine. To effect these ends the Pythagoreans offered the old mystical means of ceremonial purgations and abstinences, the avoidance of certain food and clothing, and the performance of certain ritual acts. Among them, as among the adherents of all religions, there were many doubtless who stopped with the dead letter of observance, but there were doubtless many also who reached the spirit which gave them a new and deeper life.

The exact source of the Pythagorean religious mysticism is somewhat in dispute. It has been argued that just as the Orphics reformed and purified the older cult of Dionysus out of which they sprang, so the Pythagorean Society might be regarded as essentially a reformed branch of Orphism, which sought to correct and supplement the tendency towards mere ritualism and formalism in the parent body by emphasizing the need of a real rule of life, not only in outward observances,

but in thought and meditation.[1] But it has also been suggested that the fountainhead of Pythagoras' religious beliefs lay not so much in Orphism as in the worship of the Delian Apollo, who had become, like Dionysus, the center of a "religion of redemption" with mystical rites of purification dating back it may be to Minoan Crete.[2]

However that may be, the Order, in addition to enjoying the practice of a formal ritual of purification, like the Orphics and the Apollonian worship, also divided the sheep from the goats on broader and more spiritual lines than that of mere church membership. They distinguished three types of men in general; the lovers of pleasure and gain, the lovers of practical activity, competition, worldly success, and honor, and, best of all, the lovers of contemplation and wisdom, who were devoted to the knowledge of the highest and deepest things of life. In fact, the term "philosophy" or "love of wisdom" is reported to have been first used by Pythagoras. And it was perhaps this third way of life, inspired and devoted to the philosophic interest, rather than any mere routine of ceremonial abstinences and participation in sacraments, which he regarded as religion pure and undefiled, making clean the heart within and preparing the spirit for mystical salvation and reunion with the Godhead. Such a view receives support from the fact that for Plato, as we shall soon see, who was much influenced by Pythagorean ideas, philosophy had precisely this high and solemn office.

But whether the interest in scientific and philosophical investigation and speculation had in the eyes of the Pythagorean this religious value and function, or was simply, like the modern Jesuit's occupation with similar interests, additional and subsidiary to a central and separate religious life and experience, the fact of that interest is undoubted. Like the most distinguished and learned of modern religious orders, the Pythagoreans, also, were preëminent in their application to

1 Cornford, *From Religion to Philosophy*, p. 198.

2 Burnet, *Greek Philosophy, Thales to Plato*, pp. 40-41, *Early Greek Philosophy*, 3rd ed., p. 90.

the problems of science—particularly of music, mathematics, medicine, and astronomy—and of philosophy.

The philosophy of the Pythagoreans is largely indebted to the Milesian School. Pythagoras is said to have been in his youth, before he left Samos, a pupil of Anaximander, and he was a contemporary of Anaximenes. Like Anaximander he believed that the substratum of all things was the Unlimited, but he seems to have characterized this Unlimited as Air, and like Anaximenes to have conceived the world as supported and animated by the inbreathing of this Air in the midst of which it floated.

Pythagorean science was also in part sprung from Milesian sources. The so-called "Pythagorean" proposition in geometry had already been debated in Miletus, and some of the astronomical ideas of the Order suggest the influence of Anaximander's theories.

The important and original contribution to philosophy comes, however, in connection with the Pythagorean answer to what we have called the Second Commandment of philosophy to show by what means and process all the richness and variety of the manifold and parti-colored world arises from the simple and undifferentiated World-Substance. Anaximander had suggested a process of separation of pairs of opposites, Anaximenes, one of condensation and rarefaction. The Pythagoreans hold in a way to Anaximander's notion of opposites, but these opposites are not conceived by them as eventually and secondarily produced within and by the Unlimited, like successive or even simultaneous births of dissimilar and quarrelsome twins. On the contrary, the opposition is a fundamental and eternal one, of one primary World-Principle with another. From all eternity, so to speak, the Unlimited finds itself confronted and conjoined with another Principle, that of Limit and Determination, which exists outside and beside it. It is only through the action of this Principle upon the Unlimited that the interminable vacancy and monotony of the latter can be broken up, and mapped, and plotted, and specified out into a world of separate, distinct, individual things, each fenced within the bounds of its particular and specific self. The

world, then, is the result of the interaction of these two factors. In a word, the Universe is a measuring out or off of the Unlimited by the Limited.

But this is very vague. It leaves two questions pressing for an answer. In the first place, is there any rule for determining how much of the Unlimited must be measured out in order to make definite objects? And secondly, how can different kinds of objects all be composed of one and the same indeterminate stuff? What is the difference, for instance, between a receipt for a cat and that for a dog?

An answer to the first question was suggested to the Pythagoreans by their studies in music and medicine. They knew when they played the lyre that musical notes were vibrations imparted to the air by the quivering strings; and they were also familiar by experiment with the fact that those intervals in the scale which struck their ears as melodious and concordant were always associated with invariable arithmetical proportions in the length of one string to another. Further scrutiny showed them that the four perfectly concordant notes of which the lyre was capable were in such proportion that the two middle notes stood in the relation, also, of arithmetical means to the two extremes. The means, then, might be regarded as mixtures, according to an invariable arithmetical formula, of the extremes.

This notion of the mean as a balanced and harmonious mixture of opposites was reinforced by the Pythagoreans' medical theories. The body was obviously a combination of opposite qualities of dry here, and moist there, of heat in one place, and coolness in another. When these qualities were harmoniously balanced, when there was a "happy" mean of hot and cold, etc., the body was healthy and perfect and in a state of well-being. If there was a disturbance of the balance and one opposite upset the proportion by excess or deficiency, then there was disease.

The application of these studies in music and medicine to the philosophical situation was obvious enough. It was but a short, easy step to say that all sound, solid, clear-cut things owe, like healthy bodies, their definite and articulate nature to

a harmony and balance of the factors which compose and sustain them. Every object was a correct and shapely mean between extremes of possible lopsidedness and deformity in one direction or another. The Universe, then, was the stable and well ordered, the neatly mapped and plotted and fenced affair it was, because to each of its component parts, to each cat, and dog, and tree, and blade of grass, "just enough" for that particular kind of thing, and not "too much" or "too little" had been allotted.

We should by this time be almost prepared for the answer which the Pythagoreans gave to the second question—the question which asks by what principle that balanced and happy "middle term" which means the lithe and purring cat, is differentiated from that golden mean which manifests itself in the faithful, barking watch-dog. The reply might almost rise to our lips unprompted. The measure of the one is different from the measure of the other. Each thing is a specific number, a specific amount, of the Indeterminate. Every kind of object has its own particular, mathematically expressible receipt or formula. The differences between things are then essentially differences in amount and number. In a word, the Limited, the Principle of Determination which divides up and lays out the Unlimited as an ordered and definite Universe is Number, and different things are, if one looks beyond their faces into their hearts, really nothing but different Numbers.

Before relegating this doctrine to the realm of fantastic and incomprehensible theories, let us stop and ponder it a moment. When we think of a number we generally have in mind simply the Roman or Arabic numeral by which we sum it up and symbolize it. For instance, if we think of the number "eight" there comes before our eyes simply the figure 8, or VIII. But this figure is nothing in itself. It stands for something, for eight something, or at least for eight anything. It means among other things the ability to point your finger at a line of objects and count them out. This line may be a line of all sorts of things, or, if one is abstractedly minded, it may be simply a line of plots or positions in empty space which things might occupy. But in any case the plot of space occu-

pied by the series is the sum, so to speak, of the plots occupied by each member of the line.

Or, again, any one of the plots occupied by any member of the series may be subdivided into smaller plots that shrink eventually into points. And we may finally come to the conclusion that it would take such or such a number of little plots or points to fill in the outlines of any given object. It might take, for instance, thirty-seven of them to fill in, or rather out, the contours of a pug-dog, and two hundred and fifty to complete the measure of a man. In that case the nature of the pug would be the number 37; the essence of man, the number 250. And the difference between the "just enough" which makes that perfect and harmonious balance which we call a pug, and that which constitutes the proportion and equilibrium known as man, would be simply the arithmetical difference between the numbers 37 and 250.

Now this seems to be very much the way by which Pythagoreans came to the conclusion that things were really Numbers. They appear to have thought of numbers geometrically and to have used arrangements of dots in different forms as numerical symbols, along with, or instead of, the letters of the alphabet which the Greek commonly used. Aristotle tells us that Eurytus, a Pythagorean of the early Fourth Century, used to illustrate the "nature of horse, man and plant 'by means of pebbles' or counters,"[3] in very much the same way, it would seem, as æsthetic station-masters to-day adorn the railway line at intervals with the names of their stations, or hospitable sentiments, or even symbolical figures, compounded of variegated plants or of the chaster and less frail material of whitewashed stones. Indeed, the commentator Alexander reports of Eurytus' method that "smearing the wall with plaster and sketching on it the figures of a man and a plant, he proceeded to fix some of the counters in the outline of his face, some in that of the hands, and some in that of the other parts, and so he completed the outline of the man he had imaged by a number of

[3] Burnet, *Greek Philosophy, Thales to Plato*, p. 90.

counters equal in number to the units which he said defined man." [4]

Later, after the impossibility of constructing the line, and hence the plane or the solid, out of pure mathematical points had been recognized, the Pythagoreans seem to have modified their views. Things were still ultimately composed of geometrical figures to be sure, but those figures and the objects which they constituted were no longer regarded as actually numbers (that is, aggregates of points) but only as like numbers. This new twist in their teaching made possible all sorts of fantastic applications. Many things, such as moral qualities, social institutions, etc., which could scarcely be regarded as composed of mathematical points might be fancied to have some picturesque or mysterious affinity with this number rather than that. Thus we find a square number assigned to justice, and the number five, which is the union of the first odd with the first even combination of units, applied to marriage.

The religious beliefs and the philosophical speculations of the Pythagoreans could not exist side by side in the same individual minds and the same school of thought without infecting each other to some extent. Just as the confluent waters of the Rhone and the Saône, so distinct from one another in color at their conjunction, soon mingle and merge, so the two elements in Pythagoreanism, drawn apparently from quite different sources, rapidly blended. The process was doubtless facilitated by the essential congeniality of the two lines of thought. Both were dualistic and emphasized the conflict of opposites in the world. The Orphic strain set the soul in violent opposition to the body, as a principle of good at war with one of evil, while philosophic speculation found Limit and Determination forever at variance with the Indeterminate.

The result was that the moral dualism was reinforced with a philosophic foundation, and the philosophic doctrine of the conflict of opposites took on a moral and religious significance. As the world split asunder into pairs of arithmetical qualities (which in the end were reduced to the fundamental opposition of the Limited and the Unlimited), all those on one side of the

[4] Quoted by Burnet, *op. cit.*, p. 91.

line of cleavage tended to be regarded as better than those on the other. The fundamental contrast of good and bad was already patent; so, also, that of the soul to the body was obviously one of the better to the worse. And the dry, the bright, and the warm were pleasanter, so far at any rate as weather and many other important considerations were concerned, than the wet, the dark, and the cold. So, too, the straight was easier and neater and honester than the crooked, and activity was to be preferred to inertia, or again the square is a trig, the oblong a lopsided, figure. Whatever the logical character of any antithesis, a reason could always be found for regarding one of its members as more respectable, the other as more disreputable, than its opposite.

Again, this pervasive contrast of good and evil in the world found in the opposition of Limit and the Indeterminate a ready and appropriate foundation. The idea of the Infinite, it will be remembered, did not strike the Hellenic as it has struck the modern mind. It suggested not perfection but formlessness and confusion. It was the limited and the definite in things which gave them character and perfection. Only as they were distinct and defined did they have a nature to realize and express. The logical, then, already suggested a moral, opposition between the principle of Limit and that of Indetermination. The Indeterminate was the natural and inevitable candidate for the principle of evil and imperfection, Limit and Number for the principle of good.

Now everything, whether good or bad, actually is, or at least is like, some number. But how is it possible that the things which are undesirable and evil should be composed of or modeled after that which is the principle of goodness and perfection? A scrutiny of the number series gives the answer. In that series a most convenient and suggestive opposition immediately reveals itself. We make a distinction between odd and even numbers. This distinction arises out of the quite different attitudes assumed by the two series towards the process of bisection. Every even number is naturally addicted to the habit of bisection. All may be bisected at least once without resistance or protest, and will go on taking "just one more"

till some odd number appears on the scene and arrests them. If left, however, to the dictates of their even nature they go on bisecting and are soon increased to Falstaffian proportions below the line. Infinity alone can bound their capacity and slake their thirst. They display, that is, a propensity and sometimes a passion for the Unlimited and Indeterminate.

The even numbers, then, will always "go the limit" set by the odd, and are often literally beyond it. But the odd have principles which forbid indulgence in bisection and dalliance with the Unlimited. If they are forced to it by some over-zealous admirer of arithmetic, the result is apt to be an improper, vulgar fraction and a "hang-over." Essentially limited in nature, they make it their chief mission in mathematical life to prohibit and suppress in others the bisection which they are incapable of enjoying themselves. Many a pleasant process of division is stopped, many an even number is kept from going entirely to pieces, by their interference. Nay more, each even number whose bisection they interrupt is straightway converted by them into two odd ones. All in all, if the even numbers are the Cavaliers, the odd are the Puritans, of arithmetic.

So it is that the even numbers by their addiction to bisection betray the cloven hoof. They are "limbs of Satan," in close alliance with the Indeterminate. And being already in themselves so full of the devil, they make fit material and filling for his works. It is with them that the worse member in each pair of opposites is indubitably stuffed. Scratch the crooked, or the damp, or the oblong, or the feminine, and you will surely find their Tartar "even" nature. The better member of the pair, on the other hand—a true straight line, or a dry, bright day, or a "well-rounded" square, or a real man—is some respectable odd number, the product pure and undefiled of Limit and Determination and integrity and good form.

The general development of Pythagoreanism and the modifications and embellishments which it received at the hands of its various adherents and exponents, it is very difficult, and for our purposes perhaps unprofitable, to follow. We may, however, note the view that the immediate successors of Pythagoras

tended to minimize and eliminate the religious and mystical elements in his teaching, and to emphasize and develop philosophical and scientific speculation.[5] The Pythagorean doctrine, for example, current in the time of Plato, that the soul was the harmony of the various parts and functions of the body, follows naturally enough from the views about the Mean and Number which we have just been discussing. But it is quite out of keeping with the religious belief that the soul is antagonistic to and imprisoned in the body, and is reincarnated in one new life after another. This way of looking at the matter may help explain the unembarrassed way in which during the Fourth Century Pythagoreanism as a philosophy disappeared within the portals of the School of Plato never to reëmerge.

However, the religious side of Pythagoreanism, or as we might say, the Pythagorean version of Orphism, was kept alive by some members of the School. And if it was discredited and scorned by the philosophically and scientifically minded branch of the Society, it lived to taste a splendid revenge. It was to come into its own again, riding on the crest of the swelling wave of mysticism which inundated the Græco-Roman world in the First Century B. C. To it, rather than to the scientific and philosophical attainments of the School, were due the revival of the name and the mysterious prestige of the Master, in the so-called Neo-Pythagorean movement.

Besides their work in music and medicine and mathematics, the Pythagoreans made a distinguished contribution to astronomy. Pythagoras himself seems to have held to Anaximander's three-ring theory of hoops of fire, lunar, solar, and stellar, revolving about the earth. And apparently he thought of these rings as revolving in a musical relation to one another like that of the intervals between the concordant notes of the lyre. This is the origin of our well-known phrase "the music of the spheres."

To later members of the School, however, it occurred that the earth was not the center of the universe, but itself revolved along with the other planets about some central point. This

[5] Burnet, *Early Greek Philosophy,* 3rd ed., p. 86.

point, in their estimation, was not the sun (which they reckoned among the planets) but what they called the central fire. We cannot see this fire because the face of the earth on which we live is always turned away from it, just as the other side of the moon is always invisible to us. They also assumed a body called the "counter-earth," which like the central fire, and for the same reasons, was always beyond our ken. But its shadow is visible in the eclipses of the moon, to explain which, apparently, its existence was assumed.

Let us now conclude our discussion of the Pythagoreans by noting such new turns as they may seem to have given to the development of philosophical speculation. The most obvious novelty perhaps is their dualistic suggestion that the world is not all of one piece, but must be referred to two equally fundamental and opposed Principles. To the Milesian School it did not occur that there could be more than one World-Substance or Principle. The great step forward of the earlier philosophers, that indeed which conferred upon their speculations the title of philosophy, lay in their sudden realization and grasp of the surface unity of the Universe. The World at any rate is one Fact; the sum total of existence is a single thing. And the singleness of its face they transferred quite naïvely to its heart, accepting as a matter of course that there was only one Principle at the basis of all things, and asking only whether that Principle was Water or Air or what not. Even Xenophanes, who had suggested that the World was made of two kinds of stuff, earth and water, seems to have been kept by his pantheistic musings and agnostic doubts from ever pressing the question to a point where he would have been forced to choose between a one substance theory like that of the Milesians, or some sort of dualism. He, too, was engrossed with the vision of the World as one sum and aggregate of things.

But the attention of the Pythagoreans was drawn from the very start to the diversities and contradictions on the face of things. They saw their world riven asunder on every side by oppositions, logical, moral, and perceptual, of ideas, values, and natural phenomena. When they looked more closely at

these antitheses, they saw, not, like Anaximander, some sort of indefinite Unity behind them in which all were merged and swallowed up, but rather more and deeper opposition, till finally Reality was cleft to its very roots, and fell apart into the two antithetical World-Principles which we have been discussing.

Henceforth the question whether Reality was at heart One or Many was to be a philosophic problem of the first importance. And the dualistic reply which the Pythagoreans gave when they raised the question was to exert great influence in the succeeding centuries of ancient philosophy.

Furthermore, the Pythagoreans not only mothered—if indeed they did not father—the idea that the World was to be explained by the interaction of two opposite principles, but they also made a suggestion, accepted and developed by subsequent philosophers, as to what those two principles were. And in so doing they added two new and indispensable concepts to the philosophic tool-shop, notably the concept of "Form" as distinguished from that of "Matter."

The Milesians, as we have seen, were apparently unconscious that this distinction made any philosophic difference. Practically, of course, they used it every day of their lives, as any intelligence must which is human and whose experience is not a chaos. They recognized the similarities of things, and grouped them under the same or diverse species. They made different materials into the same form, as when they fashioned bronze or gold or ivory or marble into a statue. And they molded the same material into different forms, gold into a coin, or a ring, or a cup, marble into a bath or a column. But they did not think of the distinction between the "Form" and the "Matter" of a thing as something which perhaps bit deep into the inmost reality of the object and might even reach that core of things to which their speculations were seeking to penetrate. Form and Matter were for them superficial phases which were not essentially contrasted, but were soon lost and dissolved in the unity of the one living, moving, developing Thing which lay so close beneath the surface variety of the world.

The Pythagoreans, however, evoked the two concepts into separate and distinct life and made them philosophically significant. The Number which defined the space and quantity of any given thing was, as we have seen, literally its Form—was in fact an aggregate of points or dots taking on the shape of the object in question. The difference between things was a difference of Form only. It was the enumerating Number, the enclosing Figure, which made this plot of space a man, and that a tree. In the same way, the Unlimited simply provided the wherewithal for enclosure and enumeration. It was the medium on which the points or dots were laid out or impressed. In other words, it was the material which was measured out according to this or that number to take on this or that shape. Without it there would have been nothing to arrange the dots in, or to impress them on. Numbers and figures would have had to remain purely abstract and purely imaginary. The lion would have been no more fearsome than the unicorn, and there would have been no land but fairyland. In a word, if Limit and Number gave its shape to the world and determined the forms of all that dwell therein, it was the Unlimited which turned these shapes, otherwise fantastic and "unreal," into a tangible, concrete, solid, energetic, "real" Universe. The Unlimited was the matter of which things are made, just as Numbers were the forms in which they were molded.

We can see how easily this notion of the shape or figure of an object as something distinct from the matter which takes the shape in question, might develop into a wider and profounder view. After all, things do not differ from one another in point of shape alone, but in many other respects. A tree is different from a man not only in size and figure, but also in the uses to which it can be put. Its total value and significance in the world is quite different. It is defined differently. It has its own character or nature of "tree-ness." And it is this character—that is, all which is summed up in the logical concept of tree—that makes the concrete plots of existence in which it embodies itself a forest of particular trees rather than a crowd of individual men. Form has now passed from a merely physical to a logical significance. It is no longer

simply the outer shape, but the total definable character of an object. This further development of the meaning of Form, and the great importance of the Pythagorean distinction between Form and Matter we shall realize when we come to discuss the Platonic and the Aristotelian systems.

We take leave, then, of the Pythagoreans, feeling that philosophy has made a notable advance. It has begun to dissect the World, and it has made a startling discovery about the anatomy of the Universe. Reality is not all one inside, but it has an internal apparatus which presents rather a complicated appearance. There, for instance, is Matter, and there, rather closely adhering to Matter but still obviously a distinct organ with a distinct function, is Form. There, too, is the Soul hitherto not clearly differentiated and localized, but now discovered to be a separate part of Reality with distinctive marks of its own and indeed displaying a marked antipathy for the physical aspect of the Universe.

Again, we find an interesting process going on by which two or three sciences are being "budded off," like young polyps or potatoes from a parent organism. Music is bulging out here, medicine and astronomy and mathematics there. They have not yet broken through the skin of the all-inclusive philosophic interest, but it is obvious that nuclei have formed about which more specialized and detached interests have begun to gather and grow. That they will eventually break out and away, and the form which they will take, can now be predicted.

## CHAPTER V

## HERACLEITUS

Just a hundred years separate Heracleitus from Thales. Born at Ephesus some time in the latter half of the Seventh Century, he was in his prime about 500 B. C., and it is probable that he lived to see the battle of Marathon, and perhaps that of Salamis. Of his work we possess only fragments, and these are written in a style which already in antiquity had gained him the title of "the obscure." By birth an aristocrat of the aristocrats—the religious title and office of "king" seems to have been hereditary in his family—he was himself, a later biographer [1] tells us, an arrogant and haughty man. For the "people" and democratic government he had a keen disdain, founded not wholly upon the prejudice of his class, but in part at any rate upon a very just appreciation of their faults. Certainly he had estimated quite correctly what has proved to be a constant and apparently incorrigible petulance in the temper of democracy at all times and places, when, apropos of the exile of his friend Hermodorus, he put into the mouths of his fellow-Ephesians the cry, "We will have none who is best among us; if there be any such, let him be so elsewhere and among others." [2] We may wonder what he would have said had he known that in later times this sentiment would come to be regarded by some as the last word in the art of government, and that the voice which uttered it would be called the voice of God.

For such middle-class nonconformity, half ritualistic, half evangelical, as Orphism he had also scant respect. The Orphics,

[1] Diogenes Laertius.

[2] Fragment 114. (The translations of Heracleitus are all taken from Burnet's *Early Greek Philosophy,* 3rd ed., pp. 132-141.)

he tells us, are to be classed along with "night-walkers" and "mystery-mongers." "The mysteries practised among men are unholy mysteries." [3] The phallic rites with which Dionysus was worshiped are shameless, praying to images as senseless as invoking the walls of a house, and purification by the cleansing blood of a sacred animal as foolish as trying to wash off mud with mud. The "orthodox" Homeric theology, however, fared no better at his hands than at those of Xenophanes. Homer he tells us "should be turned out of the lists and whipped," [4] and for Hesiod he had as little use. "The wisest man" he felt was "an ape compared to God, just as the most beautiful ape is ugly compared to man." [5] God is all things, as Xenophanes had declared. He is "day and night, winter and summer, war and peace, surfeit and hunger; but he takes various shapes, just as fire, when it is mingled with spices, is named according to the savor of each." [6]

Still, for reasons which we shall point out later, Heracleitus considered Xenophanes superficial and second-rate. Nor had he any higher opinion of Pythagoras. Both of them he dismissed with the remark that a varied learning does not inculcate understanding, else it would have taught them something.[7] Indeed he seems to have felt that all of his predecessors had been quite in the dark, and that it had been reserved for him to discover and enunciate the first philosophic system of any account. This conceit was in part justified, for his interpretation of the world is regarded by many as by far the most brilliant and profound philosophy of the two centuries which intervene between Thales and the teachings of Democritus and Plato.

In their table of the ten fundamental oppositions the Pythagoreans had already included the antithesis of Rest and Motion. In their preoccupation, however, with the relations of the Limited and Unlimited, which their interest in music and mathematics disposed them to regard as the central philosophic problem, they had passed over the other antitheses as of secondary importance.

[3] Fr. 125. [4] Fr. 119. [5] Fr. 98, 99. [6] Fr. 36. [7] Fr. 16.

But the interweaving of change and changelessness throughout the pattern and fabric of the world, though it might for the moment escape the attention of the philosopher, had already arrested the vision and moved the imagination of the prophet and the poet. Man had measured the transitoriness of his own existence against the fixity of nature and the deathlessness of the blessed Gods, and Homer and Hesiod and the Gnomic poets had divined the tragedy of a creature whose mind could move for a brief space, free and godlike, amid things eternal, whilst its body must stumble a little while and fall at last amid the wreckage of Time.

The conflicting magic, too, of rest and restlessness is as old as the human soul, whose varying moods of zest and weariness, its "bugles of dawn" and "flutes of rest" alternately enchant. Desire wavers like Odysseus between the longing for final homecoming and the thirst for fresh adventure. The Gods of the one mood are throned in unshaken serenity high above all the noise and the running to and fro, rescued from Time and Change. Their seats are upon the "pillours of Eternity," afar off in some bright stormless space unreached by wind and frost and rain, bathed in steady and unclouded light. The Gods of the other are no calm Olympians. Their dwelling is the storm cloud, the surge, the hurricane, the misty land seen through the driving rain, the beckoning finger of smoke spied over the tree-tops of the unknown forests, the cave of Polyphemus, the Sirens' Isle. For they are, Dionysus-like, just the wine, the intoxication, the exhilaration, the inexhaustible novelty of the ever-unfolding adventure.

With the contrast, then, of change and changelessness ever before his eyes, and his desire continually torn by their appeal to the intermingling moods of a spirit half eager and half weary, it was inevitable that as soon as man began to guess behind the face of things a heart, he should ask himself whether permanence or change was the truer index to its nature. Is the essence of all things restlessness or rest? Is Reality changing or changeless? Is it, to use the language of modern science, dynamic or static, energy or matter? Is it, as the modern philosopher might say, an Activity and Process, or is it a Sub-

stance? Is it, to employ the terms which the Greek used, Becoming or Being? . . .

It is perhaps from the quarter of the Milesian School that we may best directly approach the Heracleitan theory that Reality is essentially Change rather than a Substance unaltered by its apparent changes. The Milesians had unwittingly raised a question as important as it was difficult. In reducing the variety of the world to a single principle they had assumed both that a simple substance like Water or Air can become different things, and that it can somehow at the same time remain itself and still continue to be Water or Air underneath all its apparent transformations. To speak more technically, they had on their hands—without handling it—the problem of the relation of the One to the Many, and of the persistence of Identity through Change.

Now, a little reflection upon this problem might easily breed a certain skepticism of mind. Is it thinkable, we might ask, that any given substance should of its own initiative, and without the admixture of any outside force or element, turn into something else? Is it any more reasonable to suppose that Water really can surreptitiously turn itself into a suit of clothes, for instance, than that a red bandana handkerchief can actually within the privacy of a conjurer's tophat become a white rabbit or a glass of beer? This, however, represents only half the strain to which our credulity is put. For we are also asked to believe that the World-Substance remains the same during and in spite of its transformations. The suit of clothes is really Water all the time that Water is supposed to have become a suit of clothes. The red bandana handkerchief is both itself and also a white rabbit and a glass of beer all at once. The One is both One and Many, Reality is simultaneously both the single homogeneous thing it really is and the many different things it really is not.

The Milesian theory, then, that all things are made of one and the same single World-Substance might on investigation look suspiciously like a mere juggler's trick, and the marvelousness of its feat was bound to inspire criticism and distrust. We would seem, indeed, to be confronted with a dilemma. If

the Universe is really always the same single substance, then it is not *really* many different things and does not *really* change. In other words, the many, variety, alteration, motion are merely matters of false opinion. On the other hand, if change and variety are real there can be no unchanging self-identical Unity at the heart of things.

As we shall see later, the Eleatic School apparently accepted this dilemma as absolute, and faced frankly the consequences of clinging to the theory that the World is a single self-identical Substance. Whether Heracleitus really faced the difficulty at all, and deliberately sought to escape it, we cannot say. Certainly he was not caught on either of its horns. Both his own words and the testimony of later philosophers show how his imagination was obsessed by the changing, impermanent, diversified, kaleidoscopic character of the spectacle of existence. Becoming, multiplicity, the ceaseless transformation and interchange of the Many, are no superficial misinterpretation of the nature of the Universe but are rather its very self and essence. But at the same time, Heracleitus was just as convinced as the Milesians or the Eleatic Parmenides that the Universe is one. He would not entertain the Pythagorean supposition that two equally fundamental and absolutely opposed Principles were needed to explain things. He felt like Anaximander that even the deepest and most irreconcilable opposition was grounded in an underlying unity. His problem, then, might well have been to find some sort of Oneness which, unlike the unity of the fixed elemental substances or unities proposed by the Milesians and Xenophanes, should preserve and explain, instead of destroying, the reality of Change and Multiplicity.

The solution occurred to him perhaps even before the problem was articulate in his mind. And it was very likely this sudden insight which in his opinion distinguished him from his predecessors as the first phlosopher of any consequence. It seems to have flashed across him that this new kind of Oneness which he sought lay plain and bright before the eyes of every man who had the mind to understand the witness of his senses. To see it from without a man had only to look at the fire on his hearth. To feel it from within he had only to give heed to his

own consciousness of living and experiencing. Life and experience are forever going on, different at each new instant, crowded with variety and novelty. Yet they are somehow one and the same life and experience and career through all their changes and episodes. So, too, fire in its flaring, quivering restlessness is never the same from moment to moment. It is all bright movement and agitation, the antithesis of an ever self-identical stuff like Water or Air. Yet it, too, is unbroken and continuous, one and the same fire through all its ceaseless alteration. Here, so plain that not only he who runs may read, but curiously enough that he who runs fastest may read best, is this new sort of Oneness and Identity which permits of Multiplicity and Change. Only think of the Nature of Things as something which goes on like Life or Fire, and not as a mere state of being always the same thing like Water or Air, and we have reconciled the real change and variety of the world with its no less real unity.

We shall not be surprised, then, to learn that Heracleitus felt that in Fire he was beholding face to face the stuff of which all things are made. At its touch he could see all things yielding up their individual natures and disappearing merged and indistinguishable in the moving brightness of its burning. To life and thought it exhibited an extraordinary affinity. Our bodies glow. All higher forms of life are warm to the touch. And even to-day, for all our modern chemistry and physics, we still find Fire the most animate of inanimate beings, likening, as figure after figure of speech shows, our inner experience to its brightness and heat and fitful moodiness, and making of it a companion and fellow-being in whose presence we never feel quite friendless and alone. "This world," says Heracleitus, "which is the same for all, no one of gods or men has made; but it was ever, is now, and ever shall be an ever-living Fire, with measures of it kindling, and measures going out." [8] "All things are an exchange for Fire, and Fire for all things, even as wares for gold and gold for wares." [9]

So swift, fluid, and unarrestable is this process of ceaseless transformation and exchange of which Reality consists, that

[8] Fr. 20.

[9] Fr. 22.

the senses are unable to keep pace with it. They are always lagging behind, perceiving and recording the events of any given instant only after they are gone. They really only photograph, as it were, the trajectory of a flying projectile, and so-called specific things or moments are in reality merely sections of flight. In the words of Heracleitus' own simile, "You cannot step twice into the same rivers; for fresh waters are ever flowing in upon you." [10]

But the idea of Reality as Flux and Fire did more than overcome the difficulties, inherent in the Milesian systems, of deriving the Many from the One, and Change from a single simple Substance. It also enabled Heracleitus to see through the conflict of opposites which the Pythagoreans had regarded as fundamental, and to supplement the vague statements of Anaximander that opposites can arise within a single Principle, with the startling assertion that they are really identical. Flowing and burning mean a multiplicity of aspects and episodes succeeding, superseding, melting out of and into one another. Without another and different moment into which to go on, and another and different aspect to assume, there could be no such thing as Change and Flux. For it is by the contrast and opposition of the new to the old that we mark and measure change. Thus we only note and measure the waning of winter by the waxing of summer, the disappearance of hunger by the increasing feeling of satiety, the coming of day by the going of night. It is the very essence then of Process that all things should be constantly melting into their opposites, of Becoming that all things should be constantly becoming the negations of their former selves.

But at what precise instant in this inconceivably smooth, oily, and unbroken Flux of things are we to say that the old has become the new, that one moment of time has become another, that day has at last faded into night, or that spring has really come? Such an instant cannot be discovered or even conceived. For divide and subdivide Time and Change as you will, it is impossible to discover a moment which contains simply the old, or simply the new. On the contrary, there is no moment so minute

[10] Fr. 41.

as not to contain both the old and the new caught in the act of the one becoming the other.

Indeed, could we find an instant which was not a transition—an instant, for example, in which we could say that winter or night had come to a definite end but that spring or dawn had not yet begun—we should have arrested Time and destroyed Change. We should be dealing not with a transition and transformation of the old into the new, but with a mere *substitution* of the new for the old. The old would have been cut off short and an absolutely fresh beginning made in its place. In that case the Universe, if such it could be called, would be a collection of full stops and fresh starts, of moments and things annihilated with a bump and new moments and things suddenly jerked with a jolt into being from nowhere, like an American railway train entering and leaving way stations. And the inhabitant of such a world would be like a traveler forced to change cars at the junction of each instant with the next.

Change and Becoming cannot, then, consist in a succession of different occurrences rapidly substituted for one another. The new occurrence must be developed, budded off, prolonged from the old. In a word, it must be one with the old. Change means Identity in Difference.

This doctrine that opposites are identical is at first sight startling, and Aristotle later accused it of transgressing the law of self-contradiction. But after all, to take even the pairs of opposites upon which the Pythagoreans laid so much stress, what is day but a process of waning, and waxing night, night save a process of waning and waxing day? What is hunger but satiety in process of passing away, satiety but hunger disappearing? How should we ever know justice if it were not for injustice?[11] And according to even the very Orphics of whom the Pythagoreans were the disciples, what were the winter of nature and the death of man but life transformed and sleeping? What were summer-time and life but death and winter reawakened and risen from their sleep? "It is the same thing in us that is quick and dead, awake and asleep, young and old; the former are shifted and become the latter, and the latter in turn

[11] Fr. 60.

are shifted and become the former." [12] "Hades is the same as Dionysus." [13] "Mortals are immortals and immortals are mortals, one living the others' death and dying the others' life." [14] God really is both "day and night, winter and summer, war and peace, surfeit and hunger." [15] He really can "take various shapes," [16] for he is a "Going on" and a Becoming, not a permanent state of Being.

The fragments which we have been considering also suggest another remarkable characteristic of the Flux of the ever-living Fire. Change may bring novelty, but it also brings repetition. The number of pieces, colors, shapes, and combinations in its kaleidoscope is limited. The transformation of opposites works either way. Day becomes night and night becomes day again, summer winter and winter summer, life death and death life. Underlying the reciprocal conversions of these lesser cycles there is the great wheel of the elemental transformation of Fire down through fiery storm-cloud to water and thence to earth, and back through water to itself again.

At this point, perhaps, an objection might be made. Have we not fallen into a difficulty similar to that which beset the Milesian School? If Reality is Becoming, and there is really nothing but a Flux and melting of things into their opposites so swift that the mind can photograph in any given instant only a mere blurred trajectory, how do we come by the experience of permanent objects at all? Stability, permanence, rest are just as apparent in the world as flux and change and motion. But how account for them, if the latter alone are real?

Heracleitus has his answer ready. In the first place there is the fact that of the ever-living Fire fixed measures are ever kindling and fixed measures going out,[17] and that Change is a reciprocal exchange of Fire for all things, and all things for Fire. The "measures" sufficiently counterbalance each other and the exchange is sufficiently fair to assure no robbery of the other elements, but rather the presence of an approximately constant quantity of water and earth and the other variations of Fire.[18]

[12] Fr. 78. [13] Fr. 127. [14] Fr. 67. [15] Fr. 36. [16] Fr. 36. [17] Fr. 20.
[18] *Cf.* Burnet, *Early Greek Philosophy,* 3rd ed., pp. 150-151; also Burnet, *Greek Philosophy, Thales to Plato,* pp. 61-62.

But his explanation does not stop here. Take the great fundamental cycle of the transformation of Fire through water to earth and back to Fire again. This cycle, since it is a process of circulation, has a downward and an upward sweep which Heracleitus calls the Upward and the Downward Ways. In water, for example, there is at once a "downward" tendency to change into earth, and an "upward" tendency to change into fire. And fire and earth, which are at the top and bottom of the process of circulation, are moments and states of hesitation, pulled both backwards and forwards, as it were, when the upward swing of the cycle *from* water is on the point of bending over and becoming the downward swing *towards* water again, or when the downward plunge *from* water is turning into the upward return arc *towards* water. It follows that since the two ways are simply the prolongation of each other, they are one and the same, and afford a fundamental example of the identity of opposites.[19] But it also follows—and this more immediately concerns us—that each one of the three elements is pulled at one and the same time in opposite directions. It is a component of two conflicting forces, a friction of two antagonistic movements dragging against and retarding each other.

It is this pull of the Upward and Downward Way against each other which keeps fire, water, and earth all in existence, with their specific characters, at the same time. Abolish the Downward Way, for instance, and all water released from the downward drag in its nature would evaporate and shimmer away into fire. Abolish the Upward Way, and all fire would precipitate itself into water, and water turn to solid earth. But each drop of water because it is an equilibrium due to a tension of forces pulling in opposite directions, is held rigid and remains itself. When the sun is "drawing water" or water rises in mist, the "Upward Way" has for a time partially mastered the Downward; when it rains or freezes the Downward tendency has for the moment overcome the Upward. "Men do not know," says Heracleitus, "how what is at variance agrees with itself. It is an attunement of opposite tensions, like that of the bow and the lyre." [20]

[19] Fr. 69, 70.

[20] Fr. 45.

Obviously permanence and stability of this sort are not mere illusions due to the deception of our senses. The Flux will really bear our weight here and there, and has characteristics which are frozen and firm and definable. But this fixed and structural character of the world is, as we see, not due to any restful and sedentary habit on its part. The immobility of any thing and all things is rather the immobility of a pair of wrestlers putting forth all their strength against each other and held rigid in a deadlock in which neither is able to down the other. The cycles in nature and history are but the slow swaying and bending back and forth of these antagonists in their struggle. And the adversaries, like the Siamese twins, are one at heart. A common Life and Fire circulating from one to the other animates their struggle with each other. Could either slay or even really down the other, he would also have downed or slain himself. "War" in very truth "is the father of all and the king of all." [21] "Homer was wrong in saying: 'Would that strife might perish from among gods and men!' He did not see that he was praying for the destruction of the universe; for, if his prayer were heard, all things would pass away." [22]

Later commentators, to be sure, particularly those of the Stoic School, found in Heracleitus the belief that from time to time one of the wrestlers does fall and the whole universe "goes up like smoke," consumed by the ever-living Fire. Then again Fire makes all things new, and there is a new heaven and a new earth and a new sea. In the fullness of time these, too, go the way of their predecessors. And to this last and most tremendous cycle of world succeeding world there is no end. This interpretation, however, has been challenged on the ground that it is incompatible with the doctrine of the strife of opposites and the counterbalancing of the Upward by the Downward Way.[23] From this other point of view Heracleitus teaches indeed a periodic oscillation in the proportional strength of the wrestlers and in the amount of the basic elements into which Fire transforms itself. But at no time does one of the Ways

[21] Fr. 44. [22] Fr. 43.

[23] Burnet, *Greek Philosophy, Thales to Plato,* pp. 178 *et seq.*

completely nullify the other or one of the wrestling opposites wholly down its opponent.

Heracleitus is also quick to recognize in the Universe another kind of permanence, invisible to the eye but readily apprehended by the mind, which does not depend for a ticklish existence upon the unstable equilibrium of conflicting activities and cross currents of change. If, for instance, the Heracleitan philosophy be true, it is a fact that all things are in perpetual and uninterrupted flux. But this fact does not itself change, any more than the fact, say, that there is a constant movement of traffic on Fifth Avenue or Piccadilly moves along with the traffic on top of a 'bus. For if the fact that all things are constantly "on the go" were itself to go, then some things at least would stop, and the Heracleitan theory would no longer be a true description of the nature of Reality. The real constitution of the Universe might now be such that at times all things move on, and at times stand still, just as the traffic on Fifth Avenue is as a matter of fact periodically checked and allowed to proceed by the policemen at the cross-streets. But again, if this be the real way in which things behave, this manner of behavior does not itself now stand and now change, any more than the fact that the traffic on Fifth Avenue is halted from time to time by a policeman is itself arrested and interrupted by him.

The same considerations hold good of those things which are stated as true about the nature of Change. If it be the nature of Becoming to involve a differentiation and at the same time an identification of opposites, this fact does not itself become different or turn into its opposite. If it be a rule of the wrestling match that the relative strength of the two opponents shall vary but that neither shall ever wholly fail, this rule is not itself now more, now less, in force. If it be a law of change that the ever-living Fire shall pursue a cycle of transformations in which its Downward Way through water to earth is checked and balanced by its Upward Way from earth through water to fire again, it is as absurd to say that this law circulates or offsets itself as it would be to maintain that the rules

which govern the uptown and downtown movement of the traffic on Fifth Avenue are themselves moving in either direction.

In a word, the truth about the Universe, whatever it may be, is changeless, not with the permanence of something lasting or even everlasting in Time, but with the validity of something whose existence is altogether outside of and independent of the Flux of Change and Becoming and Time. The fact that all things change and that their change takes place in certain definite ways and along certain well-drawn lines is an eternal thing.

Now it is the method which the thinker may descry in the apparent madness of Becoming, the orderliness which he may discover in the restless flaming of the ever-living Fire, that Heracleitus calls the "Logos." Literally the term means "word" or "thought," but we might translate it in a way more comprehensible to ourselves and at the same time not untrue to what Heracleitus has in mind, if we call it the "Law" or "Order" or "Constitution" of the world.

The "Logos" has, however, much more behind it than we express by the phrase "natural law" or "natural order." It expresses in the first place not the mere fact of how things do behave. It is prescriptive as well as descriptive, determining things to behave as they do. "Nature is constrained by the rational order of her law which lives infused in her." This fragment from Leonardo da Vinci might be a fragment from Heracleitus. The Logos enforces itself. It is a "Destiny," allotting to all things their places.[24]

Again, it includes the idea of a Reason or Wisdom immanent in the world. We must not understand by this, however, that Heracleitus regards the Logos as a personal God or a Divine Mind. He feels simply that in the Flux and the Fire there is something which responds to man's desire to know and justifies his claim to knowledge. Experience is not delirium. The world is a rational world. Its ways can be understood. And this responsive, systematic, and intelligible character of things corresponds to thought and reason in man, and is, as it were, the

[24] Fr. 137 (Diels, *Fragmenta der Vorsokratiker*), *Cf.* Frs. 19, 28 (Burnet), Döring, *Geschichte der Griechischen Philosophie,* p. 95.

objective and external counterpart of his wisdom and philosophy.

Furthermore, the Logos carries with it the notion of Justice and Right. In this respect Heracleitus, like Anaximander, is an interesting witness on the philosophical side to that very late distinction by the Greek mind between natural and moral law and order which we discussed in connection with Greek religion. We to-day should not seek to explain the fixed size of the sun on grounds of ethical propriety, nor should we, if some irregularity in its size took place, indignantly feel that the sun had "gone wrong" and violated the moral law, and upbraid the inefficiency of nature for not preventing or at least immediately detecting and setting right the aberration. But this is precisely what Heracleitus does feel. "The sun," he tells us, "will not overstep his measures: if he does the Erinyes, the handmaids of Justice, will find him out." [25] The size of the sun, that is, is the right, the moral size for it to be, if the law of measure for measure is to hold. Any alteration in it would be not merely puzzling to the intellect but shocking to the moral sense. Astronomical conditions and ethical considerations are not as yet disentangled.

The same is true of all natural phenomena. Their behavior is not to be judged or explained differently from that of human beings. The World-Order is cut out of the same cloth as the moral order. The Law apparent in the World Process, a Law of compensating movement holding all things to their natures, their places, and their courses, is the same Law as forbids and checks the excess of insolence or "hybris" among men, and counsels and enforces restraint and temperance as the fundamental virtue. The resultant stable equilibrium which is the marrow of the frame of the world is all of one piece with moral stability. There is justness as well as intelligibility in the systematic character of the transformations of the ever-living and ever-changing Fire. The "Logos" is not only the Law, the Order, the allotting Destiny, it is also the Justice which flames, world without end, at the heart of things.

Indeed, Heracleitus seems to have had a scarcely less vivid

[25] Fr. 29.

conviction of this eternal Justice at work in the World-Process than had the poet Æschylus, in the next generation, of its presence as the controlling force in human history. Both men alike saw it where it was least evident to the common eye, and wrung a reluctant testimony to its presence from the apparently most hostile evidence. As Æschylus in his tragedies found it attained and exemplified amid all the intricacies of the strife of counterbalancing motives and the balance of conflicting moral obligations, so Heracleitus saw it clearly manifest in the inextinguishable warfare which Fire, in the strife of opposites and the counterpoising of the Upward and Downward Ways, is forever waging with itself. "Strife is justice," [26] he tells us. Nay, the very evil in the world in reality contributes to this "hidden attunement" which is, he tells us, "better than the open." [27] Human laws and arrangements are full of ignorance and often wrong, but the divine arrangements of things "are fair and good and right." [28]

It would be going too far, perhaps, to say that Heracleitus is here deliberately facing and struggling with the so-called "problem of evil," which later was to assume an important place in philosophy. All the difficulties connected with the presence of evil in a world wholly subservient to justice and goodness had not yet become articulate. But undoubtedly he is once more a witness to the Greek lack of distinction between natural and moral phenomena, and thinks that the opposition of good and evil is as easily harmonized as that of day and night in the general identification of opposites.

Finally we may perhaps find in the Logos fresh evidence of the tendency of the Greek mind to think of the constitution of the Universe in political and social terms. In discussing Greek religion we contrasted this analogy, so unfamiliar to us, with our own habit of likening the World-Process to the running of a machine, the functioning of an organism, or even the development of a personal career. By Heracleitus the political analogy is given a philosophic application. The Logos or Wisdom which is common to all things and all minds, and comprehensible by all who do not "sleeping turn aside each into a world of his

[26] Fr. 62. [27] Fr. 47. [28] Fr. 61.

own,"[29] and "live as if they had a wisdom of their own,"[30] is like the laws of a city by which all the citizens are bound and to which if they are wise they must hold fast. Nay, more, all man-made laws and constitutions are derived from and part of the divine Law which "prevails as much as it will, and suffices for all things with something to spare."[31] If a man then wishes to know what the Logos is like, he has only to turn to the constitution and statutes of his own city-state. Philosophy as yet knows no dividing the substance or distinguishing the persons in this trinity of social, moral, and physical law and order.[32]

Let us fix firmly in our minds this concept of a Logos—of a Law and Order and Wisdom and Justice—in things, which it is the business and the reward of philosophy to discover amid the kaleidoscopic instability of the Flux by which our senses are bewildered and our thinking confused. It has a great and splendid part to play in the future development of Greek philosophy. We may make, for instance, one of the most interesting among the many approaches to Plato, if we regard his system as essentially an amplification of the Heracleitan philosophy in which the weight of real existence has been shifted from the Flux of phenomena to a more deeply pondered Logos analyzed and enriched by the inclusion within it, not only of cosmic laws such as Heracleitus had discovered, but also of the fixed species and forms of things by which the senses are steadied and the foundations of thinking laid, and of the moral and æsthetic values by which human happiness is given content and definition, and human conduct is regulated. In Stoicism, too, we shall find the Logos in the concept of a rational and providential World-Order assigning to all things and men their places and rôles in the play of events, and in the idea of the universe as a commonwealth of Gods and men constituting the "dear city of Zeus." Finally, it enters Christian theology, and becomes part of the "faith once for all delivered unto the saints" in the opening lines of the Fourth Gospel. "In the beginning was the Word, and the Word was with God and the

[29] Fr. 95. [30] Fr. 92. [31] Fr. 91*b*.

[32] *Cf.* Burnet, *Early Greek Philosophy*, 2nd ed., pp. 131-132, 3rd ed., p. 168, and Cornford, *From Religion to Philosophy*, pp. 191-192.

Word was God. . . . And the Word was made flesh and dwelt among us." [32a]

Some account of Heracleitus' astronomical and meteorological views has come down to us in a passage, generally considered trustworthy, of Diogenes Laertius.

"He held, too, that exhalations arose both from the sea and the land; some bright and pure, others dark. Fire was nourished by the bright ones, and moisture by the others.

"He does not make it clear what is the nature of that which surrounds the world. He held, however, that there were bowls in it with the concave sides turned towards us, in which the bright exhalations were collected and produced flames. These were the heavenly bodies.

"The flame of the sun was the brightest and warmest; for the other heavenly bodies were more distant from the earth; and for that reason gave less light and heat. The moon, on the other hand, was nearer the earth; but it moved through an impure region. The sun moved in a bright and unmixed region and at the same time was at just the right distance from us. That is why it gives more heat and light. The eclipses of the sun and moon were due to the turning of the bowls upwards, while the monthly phases of the moon were produced by a slight turning of its bowl.

"Day and night, months and seasons and years, rains and winds, and things like these were due to the different exhalations. The bright exhalation, when ignited in the circle of the sun, produced day, and the preponderance of the opposite exhalations produced night. The increase of warmth proceeding from the bright exhalations produced summer, and the multiplication of moisture from the dark exhalation produced winter. He assigns the causes of other things in conformity with this.

"As to the earth he makes no clear statement about its nature, any more than he does about that of the bowls." [33]

There are also fragments which evince a considerable interest on Heracleitus' part in the problems of human conduct and happiness. It may be, indeed, that could we recover his works

[32a] But *cf.* Burnet, *Early Greek Philosophy,* 3rd ed., p. 133, note 1, for the view that Heracleitus meant by the Logos merely his own teaching, and that the Christian Logos is of Hebrew, not Greek origin.

[33] Diogenes Laertius (trans. Burnet, *Early Greek Philosophy,* 3rd ed., pp. 147-148).

in their entirety, we should find among them something like a treatise on ethics. The fragments show an aristocratic disdain of the common people, their standards, and their ways. Moral as well as intellectual enlightenment comes from a perception of the Logos, or order in things, and through conformity with it. The means for such conformity is present in the shape of reason in all men, but the ordinary people make no use of it. "We must follow the common, yet . . . the many live as if they had a wisdom of their own. They are estranged from that with which they have most constant intercourse." [34] As a result "they follow the poets and take the crowd as their teacher," and "even the best of them choose one thing above all others, immortal glory among mortals, while most of them are glutted like beasts." [35]

But this "wantonness needs putting out even more than a house on fire. It is not good for men to get all they wish to get. It is sickness that makes health pleasant; evil, good; hunger, plenty; weariness, rest." [36] This last truth is just what the truly wise man perceives by virtue of his acquaintance with the law of contradiction inherent in the ever-living and ever-changing Fire. Hence, where the common herd complain, he will cheerfully accept, where they seek to avoid hardship he will welcome it, where they flinch at pain he will bear it, knowing that by so doing he is conforming his nature to the nature of the Universe, and that "the way of man has no wisdom, but that of God has." [37]

"It is hard," however, "to fight with one's heart's desire." [38] For the conflict of desire with reason is part of the cosmic struggle of opposites. Wisdom and reason are dryness and fire in the soul. "The dry soul is the wisest and best." [39] It deteriorates when it gets wet; witness the man who "when he gets drunk is led by a beardless lad, tripping, knowing not where he steps, having his soul moist." [40] But it is "pleasure to souls to become moist," [41] as almost every one can testify. The seduction, then, of the rational will by pleasure is incidental to the cyclical transformation of the World-Fire, and the difficult

[34] Fr. 92, 93. [35] Fr. 111. [36] Fr. 103, 104. [37] Fr. 96.
[38] Fr. 105-107. [39] Fr. 74-76. [40] Fr. 73. [41] Fr. 72.

questions of conduct and morality are the inevitable problems of a life torn literally between the Upward and the Downward Ways.

Psychology, also, as well as ethics, is beginning in Heracleitus to "bud off" from the parent organism of general, undifferentiated philosophic speculation. We have noted how naturally reflection upon the fact and behavior of the living, moving, streaming consciousness within one's own heart might inspire the idea that perhaps the inner Nature of Things in general was also a living Activity, one and many, different and identical, all at the same time. Mr. Burnet, indeed, considers Heracleitus' emphasis on the Soul as of first importance to an understanding of his system, and carries the interpretation of the phenomena of the outer world in terms of the inner states and experiences of consciousness so far as to say that "Life, Sleep, Death correspond to Fire, Water, Earth, and the latter are to be understood from the former." [42] Both he and Mr. Cornford [43] suggest that this stress upon the animate aspects of the world is due to the influence of the Mysteries, with their insistence upon the Soul as an inexhaustible principle of Life in Man and Nature, of whose activity death is but a momentary phase.[44] However that may be, there can be no doubt of Heracleitus' persistent use of the term "Soul" and his interest in what we should call "psychological" phenomena. "You will not find the boundaries of the soul by traveling in any direction." [45] And, as we saw in connection with his ethical views, he regarded wisdom and virtue as a state of dryness and fire in the soul, folly as a state of moisture.

Again, he distinguishes fairly clearly within the soul between the senses and reason. The senses, he implies, present us only with the Flux, with a confused, inevitably rapid kaleidoscope of experience. It is another faculty which discovers the real

[42] Burnet, *Greek Philosophy, Thales to Plato,* p. 60.

[43] *From Religion to Philosophy,* pp. 187 *et seq.*

[44] It has even been argued that the whole system of Heracleitus is merely the Orphic theology, and particularly the doctrine of rebirth, cast into philosophic form. *Cf.* Macchioro, *Zagreus,* pp. 247 *et seq.,* and his *Eraclito Efesio.*

[45] Fr. 71.

method of Logos in the apparent madness of the Flux. To put it in modern terms: we perceive with our senses falling apples only, not the law of gravitation. It is reflection and reasoning which give us the mathematical formula that bodies attract each other in direct proportion to their masses and in inverse proportion to the square of their distances, to which the perceived movements of bodies always conform.

We may, then, discover in Heracleitus a sufficient preoccupation with the fact and phenomena of consciousness to impute to him a rudimentary psychology. But we must accompany even this statement with a reservation. Psychology has been defined as the "description and explanation of states of consciousness as such." [46] Certainly it denotes a clear demarcation of conscious from other phenomena. But we may very much doubt whether Heracleitus ever cornered "consciousness as such," or distinguished sharply between the conscious and living and the other aspects of the world. It was rather that the other aspects tended in his mind to become blurred and confused in the ceaseless flowing and sparkling of things, which was to be seen at its best in the restless brilliancy of both the flaming Fire and the life and experiences going on within us. He no more than the Milesians really extricated the conscious and living properties from the spatial and solid and substantial qualities of the world-mass in which they lay infused and imbedded, or erected them into a separate principle or even a really distinct aspect of Reality. There is nowhere in the fragments any direct opposition of soul to body or of mind to matter, excellent illustration as he might have made it of his theory of the conflict and identity of opposites. Nor can we claim with any more right that he had distinguished the concepts of matter and motion, energy and substance, from one another.

The truth would seem to be that he had not reached the point of drawing and sorting the separate threads which enter into the intricate spinning of the world. The Universe struck him, as it had struck the Milesians, as all cut of the same cloth, though the cloth to his eye was not solid and substantial but a changeable silk all sheen and shimmer. He simply accented the

[46] Ladd, quoted by James, "Psychology" (Briefer Course), p. 1.

dynamic—the living and the moving—rather than the spatial and solid properties of Reality, and resolved without having previously clearly differentiated them the solid and rigid into terms of the fluid, as when he found in Rest the tension of conflicting and compensating Motions.

In somewhat the same way, more than two thousand years later, the philosopher Leibnitz was to see in the extended and impenetrable qualities of matter mere secondary phases of energy, and was to find in a carefully reasoned idea of Force a least common denominator for the external world and the inner life, such as Heracleitus had found in Fire. But whereas Heracleitus had started with the whole cloth, caught the general effect, and outlined the pattern, without really unraveling and separating the interwoven principles and concepts, Leibnitz began with the notions of force, life, mind, extension, solidity and the like, all clear and distinct, carefully disentangled and sorted in his mind, and then proceeded to weave them into a system.

There is another point also with reference to which we should be on our guard. A long and imposing development in the history of philosophy has predisposed us to contrast the presentations of the senses with the results of reflection and reasoning in terms of Appearance and Reality. The senses we feel, if they do not deceive us out and out, at least present us with a very distorted and unreal view of the Nature of Things. It is the business of thought and reflection to correct this false view of things, and to tell us what the Universe is really like. Now when Heracleitus distinguishes within the mind between wisdom and sensation, and in the objective world between the Logos and the Flux, it is not unnatural to hail him as the prophet of this differentiation of Appearance from Reality. But the contrast of the Logos to the Flux carries no such implication in his mind. The Flux is no less real than the Logos. It is not an illusion. It is not "false opinion." It is not "mere" appearance. The senses in recording it do not falsify the real Nature of Things, but present it as it is. They see face to face —not as through a glass darkly—the ever-living Fire and the ceaseless transformation which is its essence and the essence of

all things. Wisdom, Reason, merely beholds in addition the systematic character of the World-Process.

It is equally dubious to run to the other extreme, and classify Heracleitus as an "empiricist." For by empiricism we habitually understand not simply the teaching that the senses present us with the Nature of Things as it really is, but also the doctrine that no amount of hard thinking can find out anything more about the world than the senses already have revealed, and that the so-called "real worlds" which science and philosophy think they can read between the lines of the world of phenomena are nothing but rather arid though useful synopses of the rich and vivid text of the book of immediate life. Heracleitus may be called an empiricist in one sense of the term, but not in the other. He has confidence in the senses, but he has no distrust of reason. Reason for him was not a mere extension of the process of sensation. It discovered more in Reality than the senses revealed. It spied the Logos, to which the senses were congenitally blind. Nor was this Logos a mere abstraction. It was something as real, as vital, as the process and movement itself.

But though Heracleitus' distinction between the Logos and the Flux probably does not imply any invidious distinction on his part between the senses and reason in point of trustworthiness, or justify us in classifying him as either an empiricist or a rationalist or, for that matter, in even imputing to him the common philosophic differentiation of Appearance from Reality, it perhaps does permit us to see in his doctrine a further development of concept of "Form" and "Matter." These notions, we found, were distinguished by the Pythagoreans in their doctrine of a Principle of Limit demarcating within the Field of the Unlimited the allotments and boundaries of the specific plots which we call individual things. The Form was the actual outline or figure of the object and the measure of the amount of ground or stuff or "matter" enclosed by it. And we saw how susceptible these concepts were of a much wider and more profound application.

In this application the concept of the Logos marks an important step. Form is no longer merely an outline and ex-

ternal figure or an enumeration of the visible measure of a thing, as it was for the Pythagoreans. The doctrine of the Logos adds to it as constituents, the ideas of Law and Order and System, enlarges it so as to cover the whole Universe with one comprehensive Constitution or Law or Form of Existence, and deepens it by asserting that Law and Order are not superficial but rather sink so much more profoundly into the fiery essence of things than the unaided eye can reach as to require the assistance of reason to perceive them. In a word, the idea of the principle of Form is passing in the system of Heracleitus from the realm of the picturesque into that of the abstract and the logical. It is no longer a representation of the shape, it is the definition of the nature, of an object. Beneath the panorama of existence a map has been once and for all discerned.

In the same way, Heracleitus, though he does not follow the Pythagoreans in their metaphysical separation of the principle of Matter from that of Form, nevertheless contributes largely to the growth in later philosophy of the concept of such a separate principle. The Pythagoreans, with their doctrine of the Unlimited, had already suggested indefiniteness and lack of determination as characteristic of "Matter" in contradistinction to "Form." And Heracleitus in contrasting the liquid and impermanent stuff of a world dissolved in Time and Change with the rigidity and unchangeableness of the Law regulating the Flux, added the transitoriness and the restlessness, the ceaseless growth and decay, which in the systems of Plato and Aristotle are such essential marks of Matter as opposed to Form or Idea.

With the death of Heracleitus, the philosophic preëminence of Ionia came to an end. The cities which for a brilliant and fertile century had been the mother and nurse of the speculative genius ceased to bear and foster. The spirit of philosophy passed westwards to Southern Italy and Sicily, to a home already in part prepared for it by the Pythagoreans. Nor was it to return to the coasts and islands of Asia Minor for well-nigh a hundred and fifty years; and then to find a cradle only and not a home. Melissus, to be sure, was a Samian, but he is

identified with the Eleatic School. Leucippus, born perhaps at Miletus, is a shadowy figure whose whole substance lies in Democritus. And though Anaxagoras came from Clazomenæ, and Epicurus and the founder of the Stoic School, Zeno, were born in Samos and in Cyprus, they lived and taught in Athens, and their fame redounded to the glory of their adopted rather than of their native country. So, too, later leaders of the Stoic School, Asiatic by birth, settled in Athens, or passed on to Rome. We are, then, taking our last look at Ionia.

But before embarking on the next chapter, let us review for a moment such restoration of the system of Heracleitus as we were able to make from the fragments and ruins of his writings.

Reality is something whose essence is Becoming, not mere Being. It is ever-changing Fire, not ever-the-same Water or Air as the Milesians thought.

Change and Activity, however, involve a startling paradox. The changing object is both the same and not the same. It is not the same, since it is forever passing on into a new moment of time, a new state of being, a new self, different from and opposed to the old. It remains the same, nevertheless, for otherwise we should be dealing, not with the successive transformations of a single object, but simply with a succession of different objects created and annihilated one after the other. Change, then, somehow joins together the moments and states and selves which it puts asunder. It is a unity of differences, an identity of opposites, paradoxical though such a statement may seem.

But Change also involves tension and conflict. It holds both together and apart pairs of moments, conditions, selves, which are struggling away from each other to be different, and towards each other in order to be the same. Locked in one another's embrace, these opposites wrestle against each other. And the pitting of effort against effort, motion against motion, gives the world its stability and permanence. Hence, instead of all things being each moment wholly changed and rechanged in the twinkling of an eye, we have the prolongations and slow regularities characteristic of the Flux. There is a Law to which the World-Process conforms. And this Order which

change always follows itself never changes. The nature of the World-Fire is a Process of Transformation taking place in a fixed and definite way. This nature is equally present and exemplified in any and every mood and moment of the restless Fire. It is unaltered by Time, the passage of which makes no difference to it. Its permanence, then, is not like the duration of a thing floating on and on, it may be forever, on the surface of the Flux. It is not everlasting in Time. It is lifted clear of Time and Becoming altogether. It is eternal.

This Nature or Law or Order Heracleitus calls the Logos. It is the object and counterpart of reason within us. Since it is a law of balance and compensation, building up harmony and stability out of conflict, it also appeals to our sense of justice. Indeed to understand and accept it, we have only to reflect upon the social and political order which is the expression both of the Logos and of the rational will of man. To resolve the Universe, then, into the fitful flaming of Fire, to analyze all rest into motion and all stability into change, is not to reduce all things to chaos. For the Universe still has an eternal Form and Constitution, which guarantees that everything which happens is in conformity with a law which is comprehensible and just.

Both the concepts of the Logos and the Flux, as we have seen, are great steps forward in the development of the important distinction in Greek Philosophy between the Form of a thing, which defines its Nature, and the Material Principle which stuffs the Form with concrete existence and enacts it temporarily and incompletely in a specific object.

We also detected in the Heracleitan system signs that ethics and psychology were already beginning to differentiate and specify themselves, and to bud off from the parent organism of general speculative interest.

And now let us set sail for Elea in Italy, there to take up the subject of the next chapter.

## CHAPTER VI

## THE ELEATIC SCHOOL

The flight of philosophy from the coasts of Asia Minor to the southern shores of Italy is full of romance and adventure. Before the Lydian Empire and all the wealth of Crœsus had fallen into the hands of the victorious Persians, the philosopher Thales, it will be remembered, advocated in vain the union of the Ionian cities in a single league, the better to withstand the advancing hosts of Cyrus. A Pan-Ionian Congress which was finally convened to consider the emergency turned a deaf ear also to the suggestion of another statesman, Bias of Priene, that all the Ionians should desert their hearths *en masse* and seek a new home in the island of Sardinia far in the western seas. But the advice of Bias proved to be not altogether barren, and bore its fruit in two cities when at length the barbarians were actually at their gates and the Persian siege-works began to overtop their walls. Phocæa, on the coast somewhat north of present-day Smyrna, was the first of the Ionian cities to be attacked. Its inhabitants apparently had always been a bold and venturesome lot. According to Herodotus [1] they were the first of the Greeks to give up hugging the shores in little, tubby, cargo boats and to launch swift fifty-oar power ships fit for the high and open seas. In them they undertook long voyages in distant waters, and brought back to the Hellenic world its first acquaintance with the Adriatic, the Tyrrhenian, and the Spanish coasts.

However that may be, the Phocæans at the Persian summons to surrender utilized the truce of a day, which had been granted them for the discussion of terms, in embarking their entire population and setting sail for the neighboring island of Chios. There they thought they might be able to buy land

[1] I, § 162 *et seq.*

and settle. But the Chians refused to receive them. Disheartened at their failure to find a refuge, the more timid and homesick souls went back to such homes as the Persians had left them. The stouter hearts, however,

> ". . . . shook out more sail
> And day and night held on indignantly,"

shaping their course for Alalia in Corsica, where earlier voyagers had already established a Phocæan colony. Here for five years they led a piratical and freebooting existence, a public nuisance to their neighbors by land and by sea. Finally their swift penteconters were raided by a combined Carthaginian and Tyrrhenian fleet. They succeeded in beating up, or rather off, the police, but their victory cost them so dear that they decided to move on. Once more they emigrated *en masse*, this time to Rhegium on the Straits of Messina. Thence they worked their way north along the coast, and in 536 B. C. finally settled to the south of Pæstum and founded Velia or Elea.

Curiously enough, the cradle of an even greater school of philosophy was built as the result of similar action on the part of the only other Ionian city to heed Bias' counsel. The inhabitants of Teos also eluded their besiegers by packing themselves and their belongings aboard ship and sailing away. They voyaged, however, no further than the northern Ægean where on the coast of Thrace they founded Abdera. Here the philosopher Democritus was born whose mechanical and atomic theory of the world is still an inspiration of our scientific thinking.

The Eleatic School, then, which so sharply contradicted the teachings of Heracleitus, was itself the result of an episode in a thoroughly Heracleitan adventure. Indeed, Parmenides, its founder, if he did not actually "come over on the *Mayflower*," as is suggested by Diogenes' statement that he "flourished" about 504 B. C., must at any rate have stood in close succession to the Pilgrim Fathers of the movement. In the dialogue named after him, Plato tells us that accompanied by his pupil Zeno he visited Athens at the age of sixty-five,

"very white with age but well-favored," and was interviewed by Socrates, who at the time was still a youth. If this story be fact and not a bit of dramatic license, Parmenides was born about twenty years after the founding of the city. He came of a rich and distinguished family, and himself attained political eminence. We are told that he drew up a code of laws which the Eleans each year swore to obey. As a philosopher he enjoyed throughout all antiquity a great reputation, and is always mentioned with much respect by Plato and Aristotle.

Apparently Parmenides' interest in philosophy was awakened by the Pythagoreans, by two of whom, the story goes, he was "converted" to the philosophic life. He did not, however, prove a docile pupil to his first masters. It is an open question whether he ever actually followed their religious rule, and it is certain that he soon fell foul of the dualism of their chief philosophic tenet. He could accept as little as Heracleitus the Pythagorean doctrine that the Universe can be resolved into two essentially distinct and opposed Principles, and proclaimed with equal vigor that the World is One. But he found the kind of unity attributed by Heracleitus to Reality as unsatisfactory as the Pythagorean teaching of two Principles. To him the doctrine of the identity of opposites, and the assertion that what is one and the same may be at the same time many and different, seemed as contrary to the law of self-contradiction as it later seemed to Aristotle. "Undiscerning crowds," he exclaims, "who hold that it is and is not the same and not the same, and all things travel in opposite directions."[2] To his mind the Milesians and Xenophanes were on the right track, but they had not pushed their doctrine of the oneness of things to its logical conclusion.

To what extent Xenophanes is directly responsible for Parmenides' revolt from his Pythagorean teachers and for the further shaping of his thought is a mooted point. By some it is thought that he settled at Elea, made a disciple of Parmenides, and handed on to him the leadership of the School.[3] Others, however, criticize this view on the ground

[2] Fr. 6 (trans. Burnet, *Early Greek Philosophy,* 3rd ed., p. 174).
[3] *Cf.* Zeller, *Pre-Socratic Philosophy,* I, pp. 555 *et seq.*

that Xenophanes was always a wanderer, and that there is no evidence that he ever even visited Elea. From this point of view his influence on Parmenides would have been either indirect, through hearsay, or the result of a chance and passing contact.[4] Even Parmenides' choice of verse rather than prose as a vehicle for the expression of his philosophy may be due to the example not so much of Xenophanes as of Hesiod and the Orphic literature.

Parmenides himself has perhaps given us in the introductory lines of his poem a figurative account of his apostasy from Pythagoreanism and perception of the truth as set forth in his own system. He was, he tells us, translated in a chariot from the realms of Night to those of Day. There he was ushered into the presence of a goddess who recited to him, in verses which constitute the main portion of his work, both the truth about the Universe and the false opinion of mortals "in which is no true belief at all." [5]

"The Way of Opinion" is a dualistic theory obviously of Pythagorean inspiration. The origin of all things is assigned to the interaction of the two opposed Principles of Light and Darkness. The Universe itself is described as a series of rings, somewhat like those of Anaximander. The outer, which walls in the Universe, and the inner, which is the earth, are dark and solid. Between them is a circle of brightness—the luminous heaven or atmosphere. Intermediate rings — cores of fire encased in dark—intervene between these circles. Between the earth and the heavens sits a Goddess called by later commentators, "Justice," the "Key-Bearer," or Necessity. She is the mother of all the other Gods, of whom Love is the first-born.[6]

The suggestion has been made that the "Way of Opinion" is meant by Parmenides as an account or sample of his earlier Pythagorean beliefs, which he later recanted and came to

[4] For a discussion of this point *cf.* Burnet, *Early Greek Philosophy,* 3rd ed., pp. 193 *et seq.*

[5] Fr. 1. Burnet, *Early Greek Philosophy,* 3rd ed., p. 172.

[6] *Cf.* Burnet, *Early Greek Philosophy,* 3rd ed., p. 177. Also his *Greek Philosophy, Thales to Plato,* pp. 65-66.

regard as wholly erroneous.[7] It is only fair to say, however, that other interpretations have been put forth. Parmenides, it has been held, is not regaling us with an account of the errors of his philosophic youth of which he has repented. He is rather expounding a cosmology, or theory of the structure of the surface world of phenomena, which he means to have taken seriously. That this should follow and seem to supplement a "Way of Truth" in which a quite different doctrine regarding the nature of the Reality underlying phenomena is set forth, need not perplex us. Similarly, the modern philosopher Kant in one breath expounded a carefully reasoned "Universal Natural History and Theory of the Heavens," and in the next criticized reason as incapable of grasping Reality and declared things in themselves to be unknowable.[8] So, too, Herbert Spencer, after demonstrating to his own satisfaction that the Power behind phenomena is inscrutable, devoted volumes to the elaboration of a theory of the principles by which phenomena are governed.

Or again, it may be that we are dealing with something analogous to the doctrine of the "two-fold Truth," by which the philosophers of the Renaissance, sought to square themselves with an inquisitorial Church. Any conclusion of theirs which conflicted with Christian dogma was, they declared, simply the logical conclusion to which mere reasoning unaided by revelation must come. In the same way, Parmenides may be describing the opinions at which any train of philosophic thought unguided by his reasoning will naturally arrive.

But whether he meant the "Way of Opinion" as a recantation of former error, a serious account of the external appearance and behavior of things, or an example of the results of unaided, vulgar philosophy, it occupies in any case a secondary place in his system. He concerns himself with it only after he has already reached his real position by the "Way of Truth."

In the "Way of Truth" Parmenides follows up the implica-

[7] Burnet, *Early Greek Philosophy,* 3rd ed., pp. 171, 184. Also *Greek Philosophy,* I, pp. 65-66.

[8] *Cf.* Gomperz *Griechische Denker,* I, 2, ii, § 5. *Cf.* Burnet on this view. *Early Greek Philosophy,* 3rd ed., pp. 182 *et seq.*

tions which, to his mind, lie clear and unescapable in the statement that a thing *exists*. He begins by setting up as a compass a standard employed as a matter of course by his predecessors although never explicitly proclaimed by them. Logical reasoning is the only method of discovering and testing what exists. The unthinkable cannot be. Any evidence of the senses, however direct, which fails to pass the cross-examination of reason must be rejected so far as the determination of the real nature of the Universe is concerned.

Now, what are the results of a rigorous application of this rule in working out the consequences of asserting the *existence* of anything? In the first place, there can be no such thing as nothing. Mere vacuity, sheer emptiness cannot exist. For it is impossible to think or discourse about absolutely nothing —the evidence of the senses sometimes notwithstanding. Thought and speech have to be about something, however vague. Again, and here Parmenides as we have already noted is apparently paying his respects to Heracleitus, it is equally impossible to think that anything which exists "is and is not the same and not the same." To assert the identity of opposites is to flout the logical law of self-contradiction. Whatever is, simply *is*, full blown and without reserve. It is what is, and nothing else. Existence as such has no degrees or variety.

These, however, are by no means the only restrictions laid by logic upon what can exist. A further analysis of the implications of the verb "to be" leads to truly startling conclusions. We are accustomed to regard the everyday world, packed with variety and movement, birth and growth and death, change and transformation, as something very real and substantial. Nevertheless, says Parmenides, if we will only reflect and use our reasons, we shall be forced to conclude that this world can have no real existence at all. Consider, for example, the seeming generation and dissolution, change and decay which are always going on about us. The things which come and go in the round of birth and death cannot be created out of nothing or dissolved into nothing, since there is no such

thing as nothing. We recognize this readily enough, as it is the equivalent of our modern doctrine of the indestructibility of matter. The appearance upon the scene of a new object does not increase the amount of substance and energy in existence. It is simply a remolding of old stuff already there. Similarly, the seeming destruction of an object does not decrease the sum of matter by so much as an atom. The combination is broken up and the particles are dispersed—that is all.

But, Parmenides goes on, examine more carefully this so-called process of remolding and breaking up. It cannot mean a real coming into or passing out of existence. Upon that point we agreed in the last paragraph. But if it does not mean a real coming into or going out of being, how can generation and dissolution, birth and death be a real process? For existence must come out of existence, that is, out of itself; and being will pass away into being, in other words into itself. Again, in any seeming change what exists merely turns into what exists. But can we say that a thing is really transformed, or takes on a new form, if it has really turned only into itself? On the contrary, whatever the appearance may be, it has really remained itself. Or to put it mathematically, we might say that every case of seeming change resolves itself, if logically analyzed, into an identical equation. *A* does not really become *b*, it simply continues throughout to equal *a*.

Birth and death then, growth and decay, transformation and alteration, change in all its phases, do not touch Reality. They go on without increasing or decreasing the amount of what exists, without affecting the meaning of the verb "to be," without altering the nature or definition of Being. In other words, they do not go on *in Reality*. They merely go on in our false opinion, and deluded senses. They are illusions.

Again, time, the twin-brother of change, cannot be logically regarded as real. We have no business to speak of what was, since that implies that something no longer is, or in other words, has gone out of existence. It is equally impossible to speak of what will be, since that implies that something is not

as yet, but will come into existence. What exists *is* simply now, here, all at once.[9]

With the idea of change, the idea of variety is also banished from Reality. The definition of existence, the nature of Being, is the same in every object. Hence, all objects so far as they exist and are real are the same. Reality is homogeneous and undifferentiated through and through. Nor can what really exists be thought of as spatially divided into a multiplicity of parts and points, moving about in space, as the Pythagoreans had supposed. For what is to separate these parts or points? There cannot be nothing between them, since nothing does not exist. But if there is something between them, then "what is, is in contact with what is," [10] and the being of this something and the being of the things which it is supposed to separate are not divided, but are fused and merged with one another in one continuous, unbroken mass of Being. This absolute fullness, compactness, and continuity of what exists left, in Parmenides' opinion, no room for any change of place or movement whatsoever within the sphere of Being. Nor could Reality as a whole move, since outside it there is not even nothing for it to move in.

We may speak literally of the sphere of Being, since Parmenides does not deny spatial extension and solidity to what exists, but asserts that it is shaped like a ball. Reality is for him a globe of absolutely solid, continuous, homogeneous, transparent stuff, wholly devoid of cracks and flaws or iridescent play of qualities. And we might represent the dream world of our experience, of variety and multiplicity, change and motion, as an optical illusion we have of something flickering and stirring and reflecting rainbow lights in its rigid, colorless, and motionless depths.

The reasons brought forward for supposing Reality to be a sphere, are that roundness is logically implied in its undifferentiated and even character, which permits of no "more or less or greater or smaller," or deformation or lack of equidistance

[9] Fr. 8, l. 4, Burnet, *Early Greek Philosophy*, 3rd ed., p. 174.
[10] Fr. 8, l. 26, Burnet, *op. cit.*, p. 175.

from the center. Nor is there anything outside it to "keep it from reaching out equally." [11] But considerations other than scientific may have helped determine this description of Reality. The symmetry of the sphere made it to the Greek eye the very "mold of form." As the *beau idéal* of all geometrical figures, its best and most beautiful shape was the "natural" and proper shape for complete and perfect Being. Later on, we shall also find Plato conceiving the Universe as a sphere, for the express reason that this figure is excellent above all others and therefore the only fitting form for a world created in the image of the Good.[12]

Our first impression, indeed, is that these æsthetic and quasi-moral considerations outweighed science and logic in Parmenides' mind, and that his doctrine of Reality as a sphere is a curious twist in his philosophy, for which at any rate no modern scientific justification can be found. His disciple Melissus, as we shall presently see, could not accept a curved Reality and endeavored to set things straight again by teaching that "what is" stretches out to infinity in every direction. We are inclined to approve the correction and to ask how it is possible to conceive a sphere bounded even by nothing, with no extension outside its periphery. There must be, it would seem, a convex as well as a concave side to its curvature.

But quite apart from the fact that, as Parmenides' pupil Zeno showed, it proves equally difficult to conceive space as infinitely extended, modern science has given us another warning to look before we leap too hastily to a conclusion. It is one of the revenges of the whirligig of time that the most recent developments of mathematics and physics should suggest that after all Parmenides may be right. According to the Einstein and other cognate theories, Reality in its spatial aspects actually is a self-contained sphere, or at any rate, curved.[13]

[11] Fr. 8, l. 43 *seq.* Burnet, *op. cit.*, p. 176.

[12] Plato, *Timæus.* 33b.

[13] *Cf.* Einstein, *Relativity, the Special and General Theory,* p. 108 *et seq.* For a discussion of non-Euclidian geometrics and the most recent developments of physics, *cf.* Eddington, *Space, Time, and Gravitation,* particularly Chapters V and X and the Historical Note. Appendix, p. 210. It should be noted that in Einstein's theory the sphere of closed and self-contained

All so-called straight lines and flat surfaces are really slightly curved and if sufficiently projected would in the long run return upon themselves. Our solar system, however, is so small a fraction of this spherical whole that we are unable to detect the curvature.[14] Hence, straight lines and flat surfaces give us a false opinion of extension as something which enables us to proceed indefinitely in any direction away from any given point without ever coming back to it. Similarly, the lost traveler who is in reality wandering in a circle on the surface of a vast plain calls his course a straight line and feels positively that he is not returning upon his tracks. Or again, the globe-trotter going round the world has no perception of the curvature of the earth (save perhaps at sea on a calm day) and, if unsophisticated, could scarcely be brought to believe without the experimental verification of homecoming, that as he proceeded in a straight line over a flat surface away from his front gate he was in reality always approaching his back door.

Submitted and habituated as we are, then, to thinking of the whole of space in terms of the false perspective afforded by our perception of an infinitesimal fraction of extension, our provincialism makes us cling obstinately to the view that straight lines do not return to their starting point. This in its turn gives us a prejudiced and incorrect notion of the meaning of such terms as "outside of" and "beyond," and leads us to the inadequate and unsophisticated concept of space as necessarily infinite in three dimensions.

Let us now sum up Parmenides' theory in his own words. That which exists, he says, must be thought of as a sphere "uncreated and indestructible; . . . complete, immovable, and

space is infinitely extended in both directions in time. His Universe then is really "cylindrical—curved in the three space dimensions and straight in the time dimension." (Eddington, p. 161.)

[14] Crude estimates of the size of the spatial sphere on Einstein's hypotheses suggest that it would take a ray of light 1,000 million years to "go round the world" and return to its starting point. (Eddington, p. 161.) If the sphere, however, were throughout of the density of water, its radius would be 570 million kilometers, or could be traversed by light in about half an hour. (Eddington, p. 148.)

without end . . .[15] coming into being and passing away, being and not being, change of place and alteration of bright color . . . are but names which mortals have given, believing them to be true."[16]

What the Stuff is that composes this globe of Reality, Parmenides does not further specify. But there is no need of his doing so, since his argument is equally applicable to all theories which suppose Reality to be absolutely one and simple in character, whatever that character may be. If for example, Thales be right and all things be really Water, then no thing except water really exists. All the so-called different things will be really the same thing, *i.e.*, Water. All the seeming changes of water will leave water itself the same water, in reality unchanged. And since water fills existence to the brim and is hermetically sealed within it, as it were, there exists no room for any drop of water to move or change its place.

In other words, the suspicion which overtook us early in the last chapter now deepens into a certainty. The senses actually are juggling with us when they proceed to fish red bandana handkerchiefs, glasses of beer, white rabbits, canary birds, and all the rest of the infinite complexity and variety of the world out of a cosmic top-hat filled with nothing but pure water or air. None of these transformations really occur, none of this variety really is. Time, Change, the Many, are tricks which the senses play us. But reason sees through them and knows that in Reality nothing ever occurs or changes, or begins or ends.

Cold, abstract, and difficult as the argument and conclusions of Parmenides are, they, no less than the warm and vivid teaching of Heracleitus, can stir the imagination and enlist in their behalf a passionate volunteer support of temperamental preference. For we are either bored or pacified by Rest as we are either sickened or exhilarated by Motion, and it touches the quest not only of truth but of happiness to know whether Life be really forever tossed upon the Flux and driven before the gale, or in reality lie becalmed upon the

[15] Fr. 8. ll. 2-3, Burnet, *Early Greek Philosophy*, 3rd ed., p. 176.
[16] Fr. 8. ll. 39-43 *loc. cit.*

surface of an Existence so still that the merest semblance of a ripple is sheerest fancy. The conflict between Parmenides and Heracleitus at which we have just been assisting is then no academic difference of opinion. When Heracleitus makes Motion and Chance the essence of Reality he has with him all the restlessness and love of adventure in man, all the lure of sea-horizons and the challenge flung over the crests of the secretive hills. And the Eleatic doctrine that in Reality there is neither any variableness nor shadow of turning, and that all the fret and hurry of things is mere false opinion, and all our noisy years but "moments in the being of the eternal Silence," also expresses not simply a logical conviction but voices the great longing for peace and rest, for port and still waters and furled sails, which contends with restlessness for the mastery of the soul.

Indeed, it has been maintained that Parmenides drew his inspiration largely from the mystical side of Greek religion, and that even the Way of Truth and the doctrine of the One Reality set out from a Pythagorean and Orphic starting point and led to mystical conclusions. The One Substance, it is said, is but the Pythagorean unit of which the whole number series is composed, deprived of its power to generate the many. The Way of Opinion depicts a process similar to the fall of the soul from absorption in the divine essence of Dionysus into the darkness and tribulation, the struggle and the suffering, of the body and the senses. For this straying of the soul from truth along the Way of Opinion the perfection of Reality cannot account. So, too, according to this interpretation, the return to Reality by the Way of Truth is for Parmenides really a mystical salvation, like the reunion of the purified and enlightened soul with Dionysus.[17] But we are here treading on difficult and contentious ground, which we shall do well to content ourselves with skirting.

Parmenides' failure to specify the nature of that which exists has left room also for various less mystical conjectures regarding his views. It is maintained, for example, that he conceived Reality as something immaterial and highly

[17] *Cf.* Cornford, *From Religion to Philosophy,* pp. 214-224.

abstract,[18] or again that he anticipated the modern philosopher Spinoza by first sharply distinguishing consciousness from the material world, and then proclaiming the essential identity of thought and its material object as two aspects of one and the same Being.[19] Another interpretation, seemingly less strained and more in accord with both Parmenides' own words and the philosophic concepts of the times, suggests that he thought of Reality "as something quite as solid and substantial as Water or Air, and that he, no more than the Milesians, drew any hard and fast line between the living and thinking, and the material and extended, aspects of the world.[20] His solid sphere of Being, like Xenophanes' God probably "sees all over, thinks all over, and hears all over" with a diffuse protoplasmic sensitization, as it were, rather than with a mind collected and isolated in a principle separate from and opposed to bodily Reality.

It may be, even, that Parmenides gave a very concrete and corporeal twist to the abstract form of his reasoning and to such assertions as that of the non-existence of nothing. He was, it has been said, merely refusing to distinguish between the solid and the spatial aspects of the Universe and to admit the existence of empty space. In particular he was attacking the Pythagorean dualism which conceived the world as a porous mass of the Limited, or as he calls it in the "Way of Opinion," of "compact and heavy body," afloat and steeped in the "light, thin" Unlimited.[21]

Perhaps we might also find in his refusal to differentiate space from matter fresh evidence that he had not outgrown the Milesian habit of confusing all kinds of existence in a blended World-Substance tasting equally everywhere of all its flavors. "What is" not only "thinks all over." It is whatever it is "all over" and through and through. If it is solid, it is equally solid everywhere throughout its entire extent.

18 *Cf.* Deussen, *Philosophie der Griechen,* p. 83, § 3.

19 *Cf.* Gomperz, *Griechische Denker,* I, 2, ii, § 4.

20 *Cf.* Zeller, *Pre-Socratic Philosophy,* pp. 589-90; Burnet, *Early Greek Philosophy,* 3rd ed., pp. 178 *et seq.* Also *Greek Philosophy, Thales to Plato,* p. 68.

21 *Cf.* Burnet, *Early Greek Philosophy,* 3rd ed., pp. 186-7.

Solidity and being are one just as thought and being are one. Space as little as thought can be separated from body and opposed to it.

In his attempt to confirm with his logic this habit of viewing the Universe *en bloc*, Parmenides brings out some of the difficulties inherent in the idea of a vacuum, and of the relations of matter to space, by which the physical sciences are still balked. Thus in the Seventeenth Century, Descartes, who was one of the founders of modern science, joined hands with him in asserting that there can be no such thing as nothing or emptiness; that a true vacuum is impossible, since "two bodies must touch each other when there is nothing between them";[22] and hence that material substance must be absolutely compact, continuous, and coterminous and identical with extension. But the Eleatic would not have admitted the success of Descartes' attempt to imbue a substance so conceived with motion and to divide it into a multiplicity of material bodies.

Again, Parmenides might have remarked the perplexities which beset our most modern scientific theories. Driven by the difficulties of conceiving of action at a distance without some intervening medium to carry the impulse, science has packed all interstellar space solid with a continuous, omnipresent, Eleatic ether, of which the grosser forms of matter are regarded as nodules, and through which the waves of light, heat, electrical energy, and perhaps gravitation are supposed to be transmitted. But in so doing physics has created for itself the unsolved problem of explaining how the heavenly bodies can push their way and change their place without friction in this dense Parmenidean substance, or how any differentiation of the elements can occur within its homogeneous, unbroken depths. The questions raised by Parmenides are, then, not outworn and dead. They still press for an answer, and if we cling to the view that Reality is all cut of the same cloth and is in all respects One, his is perhaps the only answer that can logically be given them.[23]

[22] *Principia*, II, 18.

[23] *Cf.* Burnet, *Early Greek Philosophy*, 3rd ed., pp. 179 *et seq.*

The modern philosopher, however, unlike Parmenides, is also plagued by the necessity of explaining away the appearance of multiplicity and variety, of time, of "coming into being and passing away . . . of change of place and alteration of bright color" with which the surface of this unrippled stillness and this flawless transparency are overspread. If the materialist be right and life and consciousness and mind be really nothing but mechanical energy, and all the seemingly different forms of that energy be nothing but movements of the ether, why do they seem to be so different from what they really are? If, as the Brahmin says, when Brahma ceases to dream the worlds will pass away, why does Brahma dream at all and dream what is not so? If, as some Buddhists claim, there exists in Reality nothing but the unbroken and dreamless peace of Nirvana, how can there arise or exist even the nightmare illusion of a struggling, suffering world torn asunder into a myriad selves and things? In Realities thus conceived there would seem to be no ground or room for even the appearance, the dream, the illusion of anything else.

So, too, beside the Way of Truth as Parmenides pursued it there should be no room for a Way of Opinion. All that is is the ball of undifferentiated, unbroken, unchanging, and immovable World-Substance. In it there can be found no reason for mortals believing Reality to be other than it is, or, for that matter, no reason for the existence of mortals and their opinions at all. Outside it no reason can be sought for, since it is all that is.

That this difficulty is never faced by Parmenides is due to the nebulous character of his distinction between Appearance and Reality. The distinction and the problem which it involves occurs to him as little as it did to Heracleitus. He, like the latter, differentiates between the senses and reason, and perhaps advances upon him in that he explicitly contrasts the fallibility of perception with the corrective function of reason and the reliability of correct thinking. We are probably entitled in his case to anticipate the distinction between "rationalism" and "empiricism," and dub him a rationalist. But we ought to do so in all caution. He may insist that only

the results of thinking are to be accepted as true, whatever the senses may protest; but he never asks what it means to have a false opinion, or why false opinions occur, much less how they can occur. In a word, neither error nor knowledge presents any *problem* to him. But until the problem of error and of knowledge is recognized and pondered, the terms "rationalist" and "empiricist" have but a vague application, and the distinction between Appearance and Reality remains without philosophic weight.

As it is, Parmenides, having once noted the untrustworthiness of the Way of Opinion and jotted down the kind of view to which it leads, dismisses it from his mind and system. He is concerned with Truth, not with the "names which mortals have given—believing them to be true," and it does not seem to enter his mind that a true account of Reality must include and explain these wrong names and erroneous beliefs applied to and held regarding it. In his eagerness to scale the Way of Truth he fails to look behind him, forgetful that it, too, is an untrustworthy path which thought cannot traverse in both directions, and oblivious to the perils of a logic that reasons out a Nature of Things in which no reason for things can be found. It is, however, only just to remember that the whole history of philosophy is plaintive with the mewings of metaphysicians who have found it easier to get up the tree of knowledge than to get down again. Parmenides is by no means the last thinker to prove a view of the world in which the world proves not to be seen.

But although Parmenides is treed by his argument, and only its collapse can bring him down to earth again, the mere fact that he argues and proves at all marks a great step forward in the development of philosophy. Previous philosophers, as we have already observed, must, to be sure, have used logical methods in their thinking and found logical reasons for their conclusions regarding the real substance of the world. The Milesians, the Pythagoreans, and Heracleitus did not work out their views innocent of logical procedure and of the difference between good reasons and bad ones. They must even have implicitly assumed that what cannot be thought cannot

exist, and that the more thinkable hypothesis is the more tenable. But they had reasoned out their systems in privacy and silence and published only their conclusions, and these in a dogmatic and often obscure form. They do not show why they are right, or why others of whom they speak slightingly are wrong. Parmenides, on the contrary, does his thinking out loud and in public, and not only announces to all the world his conclusions but confides to everyone the whole process of reasoning by which he reaches them. He tells you not merely *that* you are a fool, but *why* you are a fool if you do not agree with him. In a word, he demonstrates his theory. Thus, incidentally to the exposition of his hypothesis regarding the characteristics of the World-Substance, he also lays bare the mechanism and method of sound thinking and discloses some of the tests for determining the superiority of one hypothesis over another.

Just, then, as in Heracleitus we perceived quite plainly ethics and psychology in bud upon the parent stem of philosophy, so in Parmenides we may see the special subject-matter and science of logic assuming a distinct and recognizable form. In his pupil Zeno, as we shall find in a moment, the bud flowers into a special form of argumentation, called by the Greek "dialectic," which is employed by Socrates and Plato. We may not, however, call Parmenides the father of logic since, as we have already noted, some degree of formal reasoning is the Siamese-twin of any articulate thought. But we are entitled to believe that we are assisting if not at the Nativity, at least at the Epiphany, of methodical thinking.

Parmenides' contribution, however, is not limited to his public-spirited gift of open and reasoned argument. Philosophy is also the richer for his conclusions, extreme as they are. His view of the nature of Reality is, as we have pointed out, essentially Milesian. But seen in the dry light of his generalizations and abstract reasoning the real profundities as well as the dangerous shallows of the Milesian doctrine become evident. For example Thales, Anaximenes, and Anaximander, and for that matter Xenophanes and Heracleitus, had all assumed that the World-Substance, be it Water, Fire, Air,

or what not, is neither increased nor diminished in amount by the changes which it undergoes. In Parmenides' hands this assumption matures into an explicit statement and a logical demonstration which anticipates the scentific teaching of to-day that the sum total of matter and energy in existence is a constant and not a variable quantity. Again the Milesian feeling that the World-Stuff preserves its original qualities intact in the midst of its transformations, inconsistent as such a feeling is with a belief in the reality of change, is justified by the Eleatic in an argument for the qualitative sameness of Reality, which is prophetic of the modern hypothesis that chemistry can be understood in terms of physics, and the various chemical elements reduced to a single homogeneous matter, like the ether for example.[24]

Finally, the severity of Parmenides' conclusion that since Reality is invariable and constant both in quality and quantity, therefore motion, change, multiplicity, and variety are logically unthinkable and hence non-existent, was both a warning and a stimulus to speculation. Philosophy had reached for the moment a dead center, and had to be set in motion again, either by ousting thought with the eccentricities of mystical emotion and feeling or by restoring to reason its momentum. The moment, however, was not ripe for philosophic mysticism, which presupposes an exhaustion of reason as a means of reaching truth, and an impatience and despair of its incomplete and self-contradictory results. Logic had just become conscious of itself and, far from being jaded, was over-eager and confident. The self-stultification of Parmenides' reasoning was no evidence of final failure and disgrace, or cause for permanent discouragement. It showed no more than an incomplete acquaintance with the complexity of the world, and taught a lesson calculated to steady thinking and set it on the path of real advance. It emphasized the necessity of a further analysis on the one hand of the nature and validity of logic and knowledge, and on the other of the structure of the physical world, before leaping too hastily to logical conclusions. As a matter of fact, we shall find before long

[24] *Cf.* Gomperz, *Griechische Denker,* 1, 2, ii, § 3

the interest of philosophy centered upon the problem of knowledge, and focused in a brilliant and searching skepticism as to the existence of any absolute and universal truths. And in the next chapter we shall trace successive steps in so reconstructing the physical universe that the reality of multiplicity, motion, and change can be reasserted and reconciled with the Parmenidean—and modern scientific—doctrine that the World-Substance is constant and invariable both in quantity and quality.

The disciples of Parmenides, nevertheless, persisted in regarding the appearance of multiplicity and variety and the trick of transformation and motion as all "hypnotism," so to speak, and false opinion, and refused to admit the possibility of any "scientific" explanation. They found, however, that the Pythagoreanism against which they were revolting was by no means scotched by their master's logic. On the contrary, it was very much alive, and evinced a tendency to shed its old skin of religious mysticism and emerge with more brilliantly marked mathematical and scientific characteristics. Moreover, in the coils of its dualism the Eleatic solid sphere of pure unbroken Existence was being slowly crushed to bits before their eyes and dispersed throughout a specious space which was self-confessedly no thing. That unthinkable absurdity, the existence of a vacuum, was being reasserted, and the immutable World-Substance broken up into the four elements of Empedocles and the molecules of Anaxagoras, or pulverized into a dust-storm of swirling atomic, Pythagorean points or units. There was dire need, then, to rearray all the forces of logic for a final onslaught on the philosophic countenance increasingly given to the things which are "but names which mortals have given, believing them to be true—coming into being and passing away, being and not being, change of place and alteration. . . ."[25]

At Parmenides' death the leadership of the School fell to his pupil Zeno, said by some to have been his favorite, by others his adopted son. With it devolved the task of defending the

[25] Parmenides, Fr. 8. l. 39, Burnet, *Early Greek Philosophy*, 3rd ed., p. 176.

master's doctrines. We have already run across Zeno in the company of Parmenides at the time of the visit to Athens mentioned by Plato. He is portrayed as some twenty-five years younger, "tall and fair to look upon." Like Parmenides, he seems to have started his philosophic career as a Pythagorean and like him also, to have played an eminent and honorable part in Elean politics. The story goes that having been arrested and brought before the tyrant of the city on the charge of conspiracy, he made the pretext of wishing to whisper information in private an occasion for biting the royal ear and holding on till the tyrant was stabbed by other conspirators. Another version of the story, to which the narrator gives more credence, relates that by biting out his own tongue he shamed the bystanders into stoning the tyrant to death.[26]

But even if the story be true, and his zeal for political liberty eventually precluded him from reading aloud his discourses and defending Parmenides' doctrines by word of mouth, as he did during his sojourn at Athens, he seems to have used his pen to good advantage. His writings have been lost, but a portion at least of their substance has been reported by other ancient philosophers. So much as has come down to us is a reiteration of the already familiar thesis that multiplicity and motion are unthinkable and hence unreal.

In his manner of dealing with the subject, however, Zeno differs from Parmenides. The latter had argued directly that if we analyze what we mean when we assert that a thing *is*, we shall find, if our reasoning be close and correct, that we mean that it cannot move, change, or be divided into or composed of many parts. Zeno, on the contrary, begins by conceding the reality of the Many, of Space, and of Motion, and then shows that the self-contradictions and absurdities which follow on the concession are far greater than those involved in the denial of their existence. This particular method of reasoning by admitting for the moment the truth of an opponent's view and then exposing the contradictions of thought to which its truth commits him, was called by the Greeks "dialectic." It was later made famous by Socrates and was perfected by the

[26] Diogenes Laertius, IX, 26 *et seq.*

genius of Plato, not only as a fashion of argument but as a style for literary and artistic expression. Zeno is regarded by Aristotle [27] as its inventor, although, as we have already seen, he probably owes his inspiration to Parmenides' more general formulation of logic.

Let us now see how this method is exemplified in his handling of the objections raised, perhaps by Pythagorean contemporaries, against Parmenides' views on multiplicity, space, and motion. Take first the case of the Many *vs.* the One. Suppose, Zeno says, that the world is not the unbroken continuous Sphere which Parmenides thought it to be, but is really an aggregate of many constituent parts. If Reality is made up of parts, it must obviously be made up of a definite number of them. This is only common-sense. But common-sense just as obviously demands that every part, however small, shall be divisible into still smaller parts, and that this process of subdivision shall continue indefinitely or *ad infinitum.* The statement, then, that Reality is a Many involves with equal logic the contradictory assertions that the Many must be finite, and that they must be infinite, in number. It is even more difficult to swallow such a contradiction than to stomach Parmenides' doctrine that plurality is false opinion and that the Universe is a single, indivisible Substance.

If Reality is a Many and therefore composed of a certain number of units, this final definite number must be incapable of extension by further subdivision. But only that which has no magnitude can be thought of as indivisible. Hence these units will have no magnitude. Reality, then, being made up of parts which have no magnitude, will have no magnitude itself, or in other words will be infinitely small. Suppose, however, the other alternative that the units which compose Reality are divisible *ad infinitum.* In that case Being will be composed of an infinite number of parts. But that which has an infinite number of parts is infinitely large. Reality, therefore, will be infinitely large, as well as infinitely small. Once more, the Many prove even more difficult of mental digestion than the Parmenidean One.

[27] Diogenes Laertius, IX, 25.

Finally, if Reality is not essentially One, but a mere aggregate of the Many, the effect produced by the sum total of many units ought to be no more than the sum of the effects produced by each separately. Take, however, a measure of millet seed. Drop the ten thousandth part of a grain, or even a whole grain, and it will make no noise. Drop the whole measure and there will be a noise. But how can a noise be a sum of silences and the audible be composed of that which cannot be heard? If, then, the whole is nothing but an aggregate of parts, and "the measure of millet makes a noise," the one "grain and the ten-thousandth part of a grain make a noise" [28] and are audible, too—which is contrary to fact.

Having disposed of the view that Reality is a Many by showing that it involves more self-contradictions than the Parmenidean hypothesis that Being is One, Zeno turns to defend the teaching that Reality is a sphere outside of which there is no empty space. The difficulties of twisting our minds to the modern presentation of this view, we have already noted. Apparently the Pythagorean mathematicians, also, had immediately objected that a sphere with no space outside to bound and shape it was unthinkable. However, says Zeno, suppose that such a space exists. If it exists, "it will be in something; for all that is, is in something, and what is in something is in space." And this space in which the space containing the Parmenidean sphere of Being is placed, must itself be placed and contained in still another space. "This goes on *ad infinitum*. Therefore there is no space" [29] in the sense of a final something in which all things are placed and contained but which itself can be conceived as contained and placed in nothing outside itself. The dilemma is absolute. We must stop somewhere or nowhere. But if we are going to stop anywhere, we might just as well have stopped in the beginning with the Eleatic self-contained sphere of Existence, outside of which no extension exists. For in any case we shall be conceiving

[28] Simplicius 255 r. (trans. Fairbanks, *The First Philosophers of Greece*, p. 117).

[29] Simplicius, p. 562, 3 (trans. Burnet, *Early Greek Philosophy*, 3rd ed., p. 317).

space as eventually self-contained and finite. If, however, we do not stop anywhere, we shall certainly get nowhere and never reach anything which we can properly call the real space inside of which all bodies and extensions are contained. The idea, then, of the infinity of space is not a whit less perplexing and self-contradictory than Parmenides' idea of the bounded and spherical character of extension.

Had Zeno been a prophet, he might have reinforced this negative argument with a positive appeal to the modern mathematical and physical theories which we were discussing a moment ago. But as matters stood, he had shown that even if Parmenides were wrong, his critics were no nearer right. Indeed the twin yet incompatible necessities of conceiving space as both infinite and finite, and the seeming impossibility of conceiving them as either, led the modern philosopher Kant to reject the reality of space altogether and regard it as a wholly subjective form of human perception.

We pass now to the question of motion. Granting for the moment that motion is real, what will be the consequences of its reality? Take these two examples: Swift Achilles in pursuit of the lumbering tortoise, and the still swifter arrow flying through the air. Achilles surely seems to catch the tortoise, and apparently the arrow moves. But consider the real situation. To catch the tortoise Achilles must certainly first traverse half the space which separates him from the object of his pursuit, and then half the remaining space, and yet again half that which still intervenes. Now look closer. Achilles though always "winning near the goal" can never reach it, for he will always be separated from it by half a distance still to go. This distance may in the end be infinitesimal, but it is still real and will always intervene. Nay, more, the tortoise would be just as safe from Achilles' advance if it never moved but stood waiting for him, since a fixed limit by the same reasoning is just as inaccessible as a moving one. Motion, then, logically cannot take place. It is not thinkable. Parmenides' assertion that it is an illusion is less absurd than the belief in its reality.

Or, take again the arrow flying in the air. Obviously, it

would seem, the arrow is always somewhere. But how can we say that it is somewhere if it is moving? If it is moving it will be always between "wheres," on its way from one point to another. To think of it as really at one point or anywhere we must think of it as at rest. Its so-called flight, then, turns out on analysis to be made up of a series of contiguous points at which it cannot be conceived as flying. A movement, however, which is nothing but a sum of stops is self-contradictory and impossible. Much the easiest way out of these difficulties is, after all, to agree with Parmenides that motion is unreal.

But apparently, Zeno's opponents had their answer ready and retorted that at any given indivisible instant of time the arrow need not be regarded as at rest but could be conceived as moving and on its way from one point in space to the next. At any rate, Zeno is prepared to answer an objection of this sort. Take, he says, "equal bodies moving in opposite directions past each other in the stadium at equal speeds." [30] To be more specific and at the same time to modernize an argument whose difficulties are not obviated by the explanations of the ancient commentators, we may suppose these bodies to be two motor-cars of equal wheel-base moving along a road in opposite directions, each making say fifty miles an hour. Since their velocities are equal they will travel equal distances, as for example their own lengths, in equal times. Moreover, they will approach and pass each other at a speed equal to their combined velocities, or at a rate of one hundred miles an hour. In other words, either car will pass and clear the length of the other, in one-half the time necessary to cover the same distance on the ground. Furthermore, in any fraction of the moment of passing, however minute, the two cars will still be passing each other at double the speed, that is, in one-half the time, that they are passing over the road. So far so good.

But now Parmenides' critics had argued that the ultimate fractions into which time might be divided were indivisible instants, and that in these instants the arrow—or the motor-car —moved from point to point. In that case, it must be possible for the two cars to take half of an indivisible instant to pass a

[30] Aristotle, *Physics*, VI, 9, 239*b*.

fraction of each other's lengths and the whole of it to traverse a like amount of stationary ground. But it is by definition impossible to take half of an indivisible instant. It cannot be halved, since there is no time less than it. In such an instant, therefore, despite all the evidence of the senses, the two cars cannot be conceived as taking less time to pass some portion of each other's lengths than to go the same distance on the ground. But in that case one hundred miles an hour is really no faster than fifty miles an hour. "Double the time," to quote from Aristotle's account of Zeno, is really "equal to the half." [31]

Such are the difficulties of trying to move in indivisible instants, or in a time composed of them. Half as fast proves to be the same as twice as fast, and the brake and the throttle give identical results. In these circumstances, it is madness to maintain that the motor-car can run—except into fatal absurdities. The reasonable man, anxious to avoid suicide by self-contradiction, will rather heed in time the warnings of logic, submit without protest to arrest by Parmenides, and enter a plea of "*nolo contendere*" to the charge of really standing still while under the false opinion of "speeding." The arrow, too, or any other body intoxicated by the impression of motion, will do well to appear with the motorist at the bar and plead guilty to having mistaken for a successful flight a series of points in each of which it now recognizes itself to have been at rest. By so doing it will escape with a far lighter reprimand from reason than if it persists in the drunken assertion that it was actually moving in an indivisible instant or in a time composed of a series of such instants.

It may seem to us at first as if Zeno overshot his mark, and was too smart and subtle to be really trustworthy in detecting and writing up the paradoxical character of motion. We instinctively feel that it is all too absurd, and that there must be a "joker" somewhere in his argument. This is perfectly true; but it has taken the mathematical world some twenty-two centuries to discover just what the "joker" really

[31] Aristotle, *Physics*, VI, 9, 239*b*. Burnet, *Early Greek Philosophy*, 3rd ed., pp. 319-20.

is, and to give a satisfactory solution of the problems which Zeno raised. To answer his objections, revolutionary methods of dealing with the concepts of the infinitesimal, the infinite, and the continuous have been necessary. The results of this revolution have been to banish the infinitesimal and to redefine infinity and continuum in terms which render the Pythagorean view that everything is a sum or number of discreet units as paradoxical as Zeno had found it.[32]

We may then take leave of Zeno feeling that his arrow, albeit motionless, is a very penetrating criticism of "those who uphold a many" and that it "gives them back as good and better than they gave." If his argument is aimed at showing that his opponents' "assumption of multiplicity will be involved in still more absurdities than the assumption of unity," [33] it hits its mark squarely. Parmenides' position that motion and multiplicity are unreal may be untenable, but an attack on it on the ground that space, time, and the World-Stuff are aggregates of many indivisible mathematical points or parts will be hoist with its own petard long before it reaches its objective.

Parmenides' next greatest defender, Melissus, was recruited overseas from the island of Samos. Like Zeno, of whom he was a somewhat younger contemporary, he was eminent in the politics of his native city, and, as events showed, he could try his hand at the defense of other things than philosophic theories. The consummation of the defeat of the Persians at Salamis by the Greek victories the following year at Platæa and Mycale had been the signal for immediate disaffection and revolt on the part of the Ionian cities whose subjugation by Cyrus we noted at the beginning of this chapter. In this revolt Samos had taken a leading part. The battle of Mycale, in fact, had been precipitated by her offer of alliance to the combined Athenian and Spartan naval forces at Delos, and

[32] For a discussion of Zeno's paradoxes in the light of modern mathematics, *cf.* Russell, *Mysticism and Logic,* Ch. V.

[33] Plato, *Parmenides,* 128*c* (trans. Burnet, *Early Greek Philosophy,* 3rd ed., p. 313).

her appeal to them for help against the Persian fleet of four hundred ships mobilized off her shores. Later, she had been one of the most powerful states to enter along with the other Asiatic and island Greeks into the Confederacy of Delos, which, formed in the beginning under the hegemony of Athens as a defense against further Persian aggression, was transformed through the inevitable ascendency of the leading partner into the Athenian Empire of the Periclean Age.

The former allies, however, now become subordinate if not subject, proved unruly members. Revolts and attempted secessions were frequent, in the most formidable of which Melissus came to the fore. A quarrel arose between the Samos and Miletus over the possession of the same Priene which we have already had occasion to mention in connection with the founding of Elea. The Athenian Government not only intervened but extended its intervention to interference in the domestic affairs of the island. The ruling aristocracy was overthrown and a democratic régime was set up under the protection of an Athenian garrison. The aristocracy, however, came back in force one fine night, seized the garrison and handed it over to the Persians on the mainland, and reëstablished themselves. Pericles, who commanded the Athenians, returned post-haste at the news and invested the town. And, Plutarch tells us, "Melissus was captain of the Samians against Pericles at what time he did lay siege unto the city of Samos." [34] The Athenian statesman's attention, however, was diverted by the rumors of the arrival of a rescuing Phœnician fleet, and leaving a blockading force under command of the poet Sophocles, he went off with a part of his ships to attack the enemy. Then "Melissus, the son of Ithagenes, a great philosopher, being at the time general of the Samians: perceiving that few ships were left behind at the siege of the city, and that the captains also that had the charge of them were no very expert men of war, persuaded his citizens to make a sally upon them. Whereupon they fought a battell and the Samians overcame: the Athenians were taken prisoners, and they sunk many of their

[34] Plutarch, *Themistocles,* Ch. 2 (North's trans.).

ships." [35] The Samian success, however, was short-lived. The Phœnician fleet failed to materialize, Pericles returned, resumed the siege, and after nine months, forced a surrender (439 B. C.). The city was compelled to destroy its fortifications, hand over its fleet, and pay an indemnity. The admiral, we may fancy, returned to his philosophy for refuge and consolation.

Both Parmenides and Zeno, it will be remembered, began their philosophic careers as Pythagoreans and delivered their most telling shafts against their former masters. Melissus, however, seems to have done his first philosophizing under the influence of the Milesians and Heracleitus,[36] and in his writings has principally in mind a reformation, or when that was not possible, a refutation, of Ionian doctrines by Eleatic logic. In his use of argument he abandons the "dialectical" method introduced by Zeno, and returns to the direct reasoning, though not to the poetical form, employed by Parmenides. At the same time, he is not, like Zeno, wholeheartedly devoted to his master but differs from him, as we shall see in a moment, in two important points.

Melissus begins by reiterating the Parmenidean dictum that nothing cannot exist since it cannot be talked about "as of something real." [37] From this initial statement he deduces the twin conclusions that since emptiness is nothing [38] empty time and empty space cannot exist. Reality, then, cannot be preceded or followed by empty time, or bounded by empty space. Hence it must be conceived as unlimited in both duration and extent.[39]

In this doctrine of the infinity of Reality in space and time, Melissus modifies very considerably the teaching of Parmenides. The latter, it will be remembered, had logically enough relegated time along with its sister notions of change and motion to the realm of false opinion. "What is" simply is.

[35] Plutarch, *Pericles,* Ch. 26 (North's trans.).

[36] Burnet, *Early Greek Philosophy,* 3rd ed., p. 321. Zeller, *Pre-Socratic Philosophy,* I, p. 628, note 1.

[37] Fr. 1*a*, Burnet, *loc. cit.*

[38] Fr. 7, Burnet, *op. cit.*, p. 323.

[39] Fr. 1, 2, 3, Burnet, *Early Greek Philosophy,* 3rd ed., pp. 321-2.

The past and future have no true existence. Melissus, however, seems to take the reality of time for granted, although he is as stern as Parmenides in proclaiming the unreality of everything which happens in its course.

This view is less profound and consistent than that of Parmenides. Time, apart from the march of events whose occurrence and novelty it marks and measures, is like the Smile without the Cheshire Cat. If the mobile features of the world must fade into unreality and illusion, time should disappear with them. Melissus, however, had less sense of metaphysical propriety than Alice. She, at least, thought it odd that the Cat should fade and leave her alone with the Smile. But he exhibits no surprise at seeing Time still there without the change and motion upon whose face it ordinarily plays. Nor does he wonder that it should still be really going on, although everything which seems to go on in it is really at a standstill, and "going on" itself has proved to be a false opinion.

In his teaching that Reality is infinite in extent, Melissus disagrees with Parmenides' view that it is an all inclusive, self-contained sphere. This modification of the older Eleatic doctrine is perhaps due in part to the lingering influence of his early masters. The Milesians had all assumed that the World-Stuff is boundless and Anaximander had merely called it the Boundless or Unlimited, and let it go at that. In part, too, Melissus was probably influenced by the same difficulties of conceiving a sphere with nothing, not even empty space, outside it, which make it so hard for us to-day to grasp the Einstein theory. There would seem to be no end to extension, and since all extension in Melissus' opinion was packed full of World-Stuff, Reality must stretch away to infinity in every direction.

The rest of Melissus' doctrine is orthodox enough. Since Reality is infinite it must be One.[40] Since there is no empty space, there is nothing for Reality to move in, and hence no such thing as motion. Arguing apparently against Anaximander, Melissus also points out that the non-existence of

[40] Fr. 6, Burnet, *loc. cit.*

empty space precludes the existence of degrees of emptiness and fullness, and thus renders any process of condensation and rarefaction unthinkable.[41] The unreality of motion, again, makes the apparent spatial division of Reality into many different things also unreal. For "if what is real is divided, it moves." [42]

Qualitative variety and alteration are equally inconceivable. All change of quality and nature proves on examination to involve the old unthinkable self-contradictions of creation out of nothing and extinction in nothing. A new quality or nature would not exist anywhere before it appeared or after it disappeared. Melissus reinforces this argument by pointing out that if any characteristic of Reality, however humble or minute, could be actually erased and annihilated, as the idea of change implies, there would be no logical reason why in time all the qualities of the World-Stuff should not be rubbed out, and Reality reduced to blank nothing.[43]

The impossibility of qualitative change is also made the basis of an attack on the view that the order or arrangement, or as we might almost say, the internal relations of Reality can differ from time to time. Here, Melissus has in mind perhaps, such "evolutionary" theories of the origin of the Universe, as Anaximander's view that the world is formed by a separation of opposites within the Unlimited,[44] or the teaching of his contemporaries. Empedocles and Anaxagoras, that the world is formed by the alternate separation and mixture, or the whirling apart, of an originally conglomerate mass of various elements. Finally, a curious statement that the World-All cannot suffer grief or pain,[45] is perhaps directed against the Heracleitan doctrine that opposites are identical and that the seeming evils and imperfections of existence all contribute to the "hidden attunement" and completeness of Reality.[46]

[41] Fr. 7, Burnet, *Early Greek Philosophy,* 3rd ed., p. 323.
[42] Fr. 10, *op. cit.,* p. 324.
[43] Fr. 7, *op. cit.,* p. 322.
[44] *Cf.* Burnet, *Early Greek Philosophy,* 3rd ed., p. 326.
[45] Fr. 7, Burnet, *op. cit.,* p. 323.
[46] *Op. cit.,* p. 326.

Melissus supplements these direct arguments in favor of the unity, the eternity, and the unchangeableness of the All, with an indirect demonstration in the style of Zeno's "dialectic." Suppose, he says, that Reality is after all Many, not One, and is composed of different elements and qualities like "earth and water, and air, and iron, and gold and fire," black and white, warm and cold, soft and hard, the living and the dead.[47] Even in that case the old argument against creation out of nothing and absolute annihilation will still hold good, and hence the ultimate constituents of the Universe, if they are to be conceived as really existing, cannot be conceived as coming into or passing out of being or as altering their natures. Each one of the Many, then, will prove to be a miniature Parmenidean One, and their apparent alteration and interchange will still be unreal and illusory.[48] But if the Many lie to us when they seem to change, we may also reasonably suspect the truthfulness of their seeming multiplicity and variety. The transformation of one thing into another and the difference of one thing from another might be held to stand or fall together.

This argument, it has been suggested, is directed principally against the teaching of Melissus' contemporary, Anaxagoras, that Reality was originally a mixture of many articles endowed with the qualities and natures perceived by our senses such as white, black, iron rust, etc., and that the first step in the evolution of the world was a separation from one another of opposite kinds of molecules.[49] Still, Anaxagoras agreed perfectly with Melissus that the particles of hot, cold, soft, hard, and what not were eternal and unalterable, and tried to explain apparent transformations of quality as in reality a simple presence of now more, now less, of one kind of atoms than of another. It would seem as if at any rate the reference to the belief "that what is warm becomes cold, and what is cold warm; that what is hard turns soft, and what is soft hard; that what is living dies, and that things are born from what lives not, and

[47] Fr. 8, Burnet, *Early Greek Philosophy,* 3rd ed., pp. 323-4.
[48] *Loc. cit.*
[49] Burnet, *Early Greek Philosophy,* 3rd ed., p. 328.

that all these things are changed," [50] might be more directly aimed at Heracleitus.

We must note finally, a statement of Melissus which has given rise to considerable speculation and difference of opinion among commentators. "Now," he says, "if it were to exist, it must needs be one; but if it is one, it cannot have body; for, if it had body it would have parts, and would no longer be one." [51] The "it" has commonly been taken to refer to Being, and the fragment as a whole has been interpreted as an assertion that Reality is incorporeal. This view, however, has been opposed both on the ground of its inconsistency with Melissus' other statements, as for example that Being is "infinite in magnitude," [52] and for reasons of textual criticism into which we need not enter. Melissus is referring, it is said, not to Reality but to the indivisible yet spatially extended units of which the Pythagoreans believed all things to be composed, and is joining hands with Zeno in attacking them.[53] A similar question arose, we may remember, as to whether Parmenides considered Being abstract and immaterial or concrete and material, and was decided in favor of the latter alternative. So, too, in the case of Melissus it seems much more in accord not only with the general tenor of his teaching but with all we know of the previous development of philosophy to suppose that he had not differentiated the incorporeal, from the spatial and material, aspect of existence. He still thought of Reality in the old Milesian way, as a World-Stuff.

We may now attempt a summary of the Eleatic doctrine as a whole. Whatever exists must be thinkable, that is, logically consistent. Nothing cannot exist since it is impossible to think of nothing. But creation and destruction, and even change of nature and quality, involve coming into being from nothing, and going out of being into nothing. Hence Reality must be uncreated and indestructible, and of an unchangeable nature

[50] Fr. 8, Burnet, *Early Greek Philosophy,* 3rd ed., p. 323.
[51] Fr. 9, *op. cit.,* p. 324.
[52] Fr. 3, *op. cit.,* p. 322.
[53] Burnet, *Early Greek Philosophy,* 3rd ed., p. 327.

subject to no alteration of any sort. Qualitative difference cannot arise within it.

Again, since nothing cannot exist, empty space cannot exist, for empty space is no thing, but is void. Reality, therefore, must pack space solid. Or rather, the corporeal and spatial aspects of Reality are inseparable. But if there is no empty space, there can be no motion, since movement requires room and room implies unfilled extension. In Reality, therefore, there can be no spatial movement or, to put it technically, no locomotion. "What is" must be as still as it is colorless. Finally, if there is no empty space, no quantitative divisions or parts can take place or exist in the Real, since division would imply movement apart, and the distinction of parts from one another would imply the existence of empty space between them. In a word, Reality, whatever it may look like, can be logically conceived only as one single rigid block of solid, absolutely continuous and transparent substance, without crack or flaw or iridescence. Hence multiplicity, variety, change, alteration, development, motion, etc., are all illusion and false opinion.

Reality is One, in contradiction to the Pythagorean doctrine of Number and the two Principles of the Odd and Even, against which both Parmenides and Zeno had revolted. It packs space solid in protest against the implication of empty space, and hence of the existence of nothing, latent both in Anaximenes' doctrine of condensation and rarefaction, and in the Pythagorean teaching that the dense Limited is surrounded and permeated by the light, thin Unlimited. It is a severely simple static, unchanging, ever-the-same sort of One, in logical succession to the Milesian World-Stuffs, and in opposition to the brilliant, restless, versatile, never-the-same Oneness of the perpetual Flame and Becoming of the Heracleitan Fire.

According to Parmenides, the unchangeable and motionless Reality is lifted clear of time. In it there is no past or future, but simply what modern philosophers have called the timeless present. In other words, it is eternal. Time shares the fate of its blood-brothers, change and motion, and is relegated with them to the realm of false opinion and illusion. According to

Melissus, however, Reality is infinite in time. It is not eternal but everlasting.

Again, Parmenides teaches that Reality is a sphere, thereby curiously anticipating some of the most recent hypotheses of the mathematics and physics of to-day, as, for instance, the Einstein Theory. Melissus, on the other hand, reverts to the view, more popular then as now, that the spatial extension of Reality is infinite in every direction.

Both Parmenides and Melissus use a direct method of argumentation. Parmenides develops his case by analyzing the meaning and deducing the consequences of the statement that something exists. He sets up reason as the test of truth and of the possibility of existence. Anything which proves to be unthinkable cannot really exist, however evident it may seem to the senses. By virtue of this out and out assertion that what cannot be thought cannot be, and because of his habit of demonstrating his conclusions step by step in public, he may be regarded as the promoter if not the discoverer of logic as a special science or subdivision of philosophy.

Zeno's method is different. In his attack upon the existence of the Many, and in his famous paradoxes of Achilles and the tortoise, the flying arrow, and the bodies moving at different speeds, with which he seeks to disprove the possibility of motion, he uses what is called the dialectical method. He admits for the moment the truth of his opponents' theories and then exposes the self-contradictions which their truth entails. Zeno is regarded by Aristotle as the inventor of this method, which later plays so brilliant a part in the philosophizing of Socrates and Plato.

We may conclude our discussion of the Eleatics by also briefly reviewing and summarizing our estimate of their contribution to the development and future direction of philosophy. We noted, in the first place, that Parmenides brought about a metaphysical crisis by pushing to its logical conclusion the Milesian hypothesis of a single homogeneous World-Substance, and showing that it rendered multiplicity, variety, change, empty space, and motion all unthinkable. At the same time he had proved to the satisfaction of his opponents as well as

of his followers that the World-Stuff must be changeless and fixed both in quantity and quality. Two alternatives were now possible to speculation. Either the unfixed and changing everyday world could be regarded as unreal and illusory, and philosophy could turn skeptical or mystical, or a new theory of the World-Stuff might be reasoned out which should reconcile the indestructible and unalterable nature of matter with the multiplicity, the variety, the change, and the motion apparent to the senses. This latter alternative was embraced first by philosophy. The immediate result and concomitant of Eleaticism was an assertion of the existence of motion, and a division of the Parmenidean One into a fixed quantity of unalterable particles or atoms whose shifting combinations and arrangements accounted for the variety, the "becoming," and the apparent coming into and passing out of being, of phenomena. Eventually a further study of motion made the possibility of movement depend upon the real existence or empty space as something distinct from the matter which moves in it. Thus the Eleatic School played the part of an unkind and provocative stepmother to the developments which we shall take up in the next chapter.

But the other alternative lay dangerously open. By insisting upon the exercise of pure reason as the only means of determining what really exists, Parmenides, curiously enough, paved the way both for skepticism and mysticism. The mind thrown back upon logic for its only guide not unnaturally asked reason to give an account of the Reality to which the way of Truth led. But reason in reply could give no positive description of Reality except to say that it was round. For the rest it could describe it only negatively. And the inquiring mind might well feel that the single negation "unknowable" covered all the other "un-s" and "im-s," and "a-s." Melissus is well on his way to skepticism when he says that although we "say that we see and hear and understand aright . . . it turns out that we neither see nor know realities." [54] Another step, and we have reached the verdict of the Sophists that the evidence for any Reality outside our individual experience is undemonstrable,

[54] Fr. 8, Burnet, *Early Greek Philosophy*, 3rd ed., pp. 323-4.

and that no such thing as absolute truth can be established. Thus Eleaticism inspires not only the reconstruction undertaken by Empedocles, Anaxagoras, and Democritus, but also the agnosticism by which their theories were condemned.

But skepticism, thanks to man's inveterate curiosity and self-confidence, is seldom a fixed or universal mood. If the mind is convinced, that the Way of Truth and Reason is as blind an alley as that of Sense and Opinion, it will press on towards the heart of things by a third way of mystical inner experience, immediate feeling, and direct contact with the Real. Otherwise it will try the way of Truth again, confident that the mirage of phenomena is not a mere trick played the senses by an interminable desert of logical negations, but rather reflects the existence beyond the horizon of a fertile and fruitful World-Ground which thought can really reach. In a more jaded age, the Eleatic School might have not only stimulated but also guided a mystical reaction. That the world of phenomena is all false opinion and illusion; and that all things are really One are cardinal points of any mystical theory. And the failure of reason to describe Reality except in negatives invited feeling and ecstasy and beatific vision to fill in the blank.

But logic was too fresh to be dismayed by skepticism, and reasserted that the Truth can be known. The agnosticism of the Sophists was followed by the philosophies of Plato and Aristotle. To this new reconstruction, also, the Eleatics ministered. Their tests of "what is" were again accepted. Reality had to be thinkable, unalterable, eternal. Skepticism, however, had sharpened the critical faculty and diverted philosophic interest from the physical to the mental aspects of the world. The new analysis of experience discovered that what is thinkable, unalterable, eternal, and therefore real, in things is not the Stuff of which they are composed but the universal Types and Laws by which a matter otherwise fluid and formless is molded and stabilized. Thus, when the empty frame of the Parmenidean Reality was again filled in, the picture was not of concrete indestructible and unchangeable elements and atoms, such as constituted the World-Stuffs of Empedocles and Anax-

agoras and Leucippus. It was rather of the Heracleitan Logos amplified into a system of abstract changeless and abiding Forms to which the Universe owes its enduring structure and its rational and orderly character. Conversely, Matter which had once been the substance of the Real and had paved the Way of Truth with solid Being, now became the ground of appearance, error, and illusion, and paved the Way of Opinion with "such stuff as dreams are made of."

But we have already posted far in advance the road which we are to travel. Let us now pass on to inspect that section of it which is laid on a foundation of material elements and atoms.

## CHAPTER VII

## THE PLURALISTS

### I

Although they hailed from different ends of the Hellenic world and differed widely in their teaching, the philosophers whom we are about to study are, with the exception of Diogenes, frequently grouped together by historians of philosophy. The reasons for this grouping lie in certain fundamental similarities beneath the surface diversity of their doctrines, in the common bias with which they seem to approach some of the philosophic problems of the day, and in the continuity of development which we can trace in their theories. The nature of their agreement is indicated by the epithets applied to them. By some they are called the Pluralists, because they are at one in asserting the reality of the Many, by others the Materialists or the Mechanists because in the course of their speculations they evolve a theory of Reality as Matter in motion running automatically like a machine. Again, their philosophies are sometimes considered attempts at the reconciliation of Heracleitus with the Eleatics, since they combine a belief in the reality of change and motion with the view that the World-Stuff is changeless and eternal. These headlines are vivid and useful generalizations. But we should remember that, with the possible exception of their pluralism, the thinkers in question were not necessarily gifted with the power of seeing themselves as others see them. Like the Milesians they would probably have demanded further explanations only possible in the perspective of subsequent history, before professing a willingness to own these soft impeachments.

The gossip which obscures the life of Empedocles is second only to the legends which enshroud Pythagoras, and sometimes

outvies them. For this gossip it must be admitted, Empedocles himself is somewhat to blame, seeing that he claimed that he was an "immortal god . . . honored among all as is meet, crowned with fillets and flowery garlands," [1] who possessed "the power to heal old age and sickness, to raise and calm the winds, to summon rain and draught and to bring the dead to life." [2] By later commentators he is credited with having actually raised the dead and stopped the northern "monsoon" from blowing upon his native city, as well as with the more practical work of delivering the city of Selinus from pestilence by flooding the adjacent marshes. The manner of his death is also variously reported. He is said to have disappeared in the night at the summons of a great voice and in the midst of a great light from heaven; to have jumped into the crater of Etna; to have hanged himself; to have fallen out of a chariot; and to have fallen into the sea and drowned from sheer senility.

The truth is that Empedocles like Pythagoras lived a double life. On the one hand he was a doctor, a scientist, and a philosopher, the founder of Italian medicine according to Galen, and of rhetoric according to Aristotle. On the other he was a religious mystic, profoundly influenced in his beliefs by the Pythagoreans and the Orphic movement. And, as has so often happened in other cases of the same sort, he kept from his right hand all knowledge of the doings of his left, and *vice versa*. His religion and his philosophy, like the Catholicism and the science of Pasteur, to take a modern example, went their way side by side unhampered and unprejudiced by one another. Thus he could believe in his own supernatural origin and powers and get the name of a miracle-worker at the same time that he thought out a philosophic system and built up a great scientific reputation. Moreover, it should be remembered that then as now medicine was fringed with mystery and magic. But in those days it was mostly fringe and its patent medicines, panaceas, quacks, and healers had not been curbed by the development of sound practice.

[1] Purifications. Fr. 112. Burnet, *Early Greek Philosophy*, 3rd ed., p. 222.

[2] Zeller, *Pre-Socratic Philosophy*, II, p. 119, note.

Besides being a devout mystic, a self-deceived miracle-worker, a keen physiologist and doctor, and a great philosopher, Empedocles also inherited the political traditions and talents of a governing class. He came of one of the most aristocratic and richest families of Acragas or Agrigentum in Sicily. His grandfather, after whom he was named, had bred and run the horses which won for his family and city the additional distinction of victory in the chariot-race at the Olympic games. His father had taken part in the overthrow of the tyrant Thrasydæus and became one of the most influential leaders of the newly established democracy. Empedocles likewise, when he grew up, was to prove himself an eminent man of affairs.

The times to which he was born, probably a little before 490 B. C., were stirring enough. The news of Marathon he would have been too young to remember. But as a small boy he may well have seen the Acragantine troops marching out to attack Himæra, a town on the other side of the island, and to depose its tyrant. And he must have shared in the terror and excitement when Carthage made of this incident a pretext for launching the attack on Sicily which she had long been preparing, in secret alliance with Xerxes, to accompany the renewal of the Persian offensive against Greece. He must also have watched the troops march out once more, this time against seemingly overwhelming odds, and have taken part in the mingled mourning and rejoicing when the messengers returned to tell how, after a desperate battle, the Carthaginians had been routed at Himæra by the combined forces of Acragas and Syracuse, and Sicily was saved. Later would have come the news of the almost simultaneous defeat of Xerxes at Salamis (480 B. C.).

Empedocles grew to manhood in the eight brilliant and prosperous years which followed the repulse of Hamilcar. He was about twenty years old when the able and beloved tyrant Theron died. The death of the tyrant was almost immediately followed by the overthrow of his son, the worthless Thrasydæus, who in his short year of misrule had involved Acragas in a disastrous war with Syracuse, and a democratic constitution was established. Empedocles showed himself even more mark-

edly liberal in his politics than his father, for later when the aristocracy had regained control of the government and there were whispers of a restoration of the tyranny, he thwarted the plot and assumed the leadership of the popular cause. He even anticipated the example of George Washington by refusing the kingly crown offered him by the grateful people.

But Empedocles soon had cause to mourn the gratitude of men. The Acragantine democrats, like Heracleitus' fellow-Ephesians, would suffer none above the average among them. Empedocles went off to Olympia, perhaps not altogether willingly, to present his philosophic poem at the Games. His enemies succeeded in turning his absence into an exile from which he never returned. The manner, time, and place of his death are unknown. It probably took place in the Peloponnesus or at Thurii in southern Italy about 435 B. C.

In his religion, as we have said, Empedocles was under the spell of Pythagorean and Orphic mysticism. Both these movements, it will be remembered, were reformations, and the opening lines of the religious portion of Empedocles' poem announce his own sturdy protestantism. In his initial protest, however, the scientist and philosopher would seem to have joined hands for the moment with the religious reformer. It begins with a fervent prayer that he may "utter a pure discourse concerning the blessed gods." [3] and this petition is followed and answered by a denunciation of the popular Homeric theology with its Gods made in man's own image. In a spirit and in language which strongly suggest the influence of Xenophanes he proclaims that "It is not possible to set God before our eyes or to lay hold of him with our hands." [4] God is without body, passions, or parts, "a sacred and unutterable mind flashing through the whole world with rapid thoughts." [5]

These verses, however, like similar utterances of Xenophanes, should not be regarded as an indication of a belief in monotheism. Empedocles' protestantism did not suggest, and his science forbade, such a conclusion. In the philosophic part of

[3] Fr. 131, Burnet, *Early Greek Philosophy*, 3rd ed., p. 225.
[4] Fr. 133, *loc. cit.*
[5] Fr. 134, *loc. cit.*

his poem he speaks of the World-All as God,[6] and we are told that he also considered its constituent elements divine.[7] The flashing through the whole world of sacred and unutterable mind is probably little more than a brilliantly phrased equivalent to the homely seeing, thinking, and hearing "all over" of Xenophanes' God. Indeed, far from preaching a personal God, Empedocles like his predecessor would seem to be protesting against the confinement of the divine to the persons of the man-like popular deities. God, he feels, can no more be separated from the World-Stuff than can thought or life or empty space. The Universe not only sees, thinks, and hears, it is also God "all over." Empedocles, to be sure, in both the religious and scientific portions of his poem speaks conventionally enough of "the Gods," but they correspond more closely to what we should call "angels," and the only scientific note he takes of them is to mention them along with "trees and men and women, beasts and birds and the fishes," [8] as sample products of the World-Stuff.

This rejection of the "established" Homeric theology Empedocles supplements with a positive declaration of faith in the central article of the Orphic creed—the doctrine of reincarnation. Man, he tells us, is a fallen "god" or "dæmon," an "exile and a wanderer from the gods," [9] doomed to "wander thrice ten thousand seasons from the abodes of the blessed, being born throughout the time in all manners of mortal forms, changing one toilsome path of life for another." [10] Such is the fate which has befallen Empedocles himself. Already in the course of birth and rebirth "he has been a boy and a girl, a bush and a bird, and a dumb fish in the sea." [11]

The hope and means of salvation are of the familiar mystic type. As with the Buddhists, a long discipline of purification is necessary lasting through many births. This discipline, mod-

[6] Fr. 30, 31, Burnet, *Early Greek Philosophy,* 3rd ed., p. 211.

[7] Cicero, *De Nat. Deorum,* XII, Diels, *Doxographi græci,* 535; Aristotle, *Gen. Corr.,* II, 333b. *Cf.* Fr. 59, Burnet, *op. cit.,* p. 214.

[8] Fr. 23, Burnet, *op. cit.,* pp. 209-10.

[9] Fr. 115, Burnet, *Early Greek Philosophy,* 3rd ed., p. 222.

[10] Fr. 115, *loc. cit.*

[11] Fr. 117, *op. cit.,* p. 223.

eled apparently on the Pythagorean rule, lay not merely in the observance of moral precepts but in the avoidance of tabooed articles. The eating of flesh, and incidentally the established rite of animal sacrifice with which the worship of the Olympian Gods was celebrated, were particularly abhorrent, since it may be that the "father lifts up his own son in changed form and slays him with a prayer," and that "in like manner does the son seize his father, and children their mother, tear out their life and eat the kindred flesh." [12] Laurel, which represented the highest stage of purification to be attained in vegetable form, and the already familiar Pythagorean bean, were also taboo.

In the end, the wholly purified and redeemed, who stand, as the Buddhists would say, on the brink of Nirvana, are reincarnated in the noblest human forms and at their death are reunited with their divine source. Empedocles describes their release in words inspired, it would almost seem, by the famous picture of the Islands of the Blest in the great ode with which Pindar immortalized the victory of Theron of Acragas at the Olympic Games.[13] The purified "appear among mortal men, as prophets, song-writers, physicians, and princes; and thence they rise up as gods exalted in honor, sharing the hearth of the other gods, and the same table, free from human woes, safe from destiny, and incapable of hurt." [14]

To match this vision of the "prophets, song-writers, physicians, and princes" awaiting the moment of their final redemption, Empedocles has also the vision of a Golden Age. In verses which again remind us of Pindar's ode he sings of a time when men even in their human state were as yet innocent of evil, and dwelt at peace with one another and with beasts and birds, shaded by ever fruitful trees, and charmed by the wise discourses of Orpheus.[15]

We turn now from Empedocles the Orphic mystic to the other Empedocles, the scientist and philosopher. Just as his

[12] Fr. 137, *op. cit.*, pp. 225-6.
[13] Olymp. II. *cf.* Cornford, *From Religion to Philosophy*, pp. 228-9.
[14] Fr. 146, 147, Burnet, *Early Greek Philosophy*, 3rd ed., p. 226.
[15] Fr. 129, 130, Burnet, *op. cit.*, pp. 224-5. *Cf. Ibid.*, 1st ed., p. 236, note 7.

religious beliefs were the result of Pythagorean influence, so his chief scientific interests—medicine, physiology, and the like—can scarcely have been developed independently of the medical studies fostered by the Brotherhood and already so brilliantly exemplified in the researches of his fellow philosopher-doctor, Alcmæon. But if his religious, and to some extent his scientific, views were the result of Pythagorean influence, his philosophical speculations may be traced directly to Eleatic teaching. Tradition, indeed, makes him in a literal sense a schoolmate of Zeno and a pupil of Parmenides. However, that may be, he adopted, like Parmenides, verse as his vehicle of expression, and accepted many of the fundamental Eleatic tenets, such as the indestructible and unchangeable character of the World-Stuff, the impossibility of any real coming into, or passing out of being, and the non-existence of empty space. He even thought of the World-Stuff as originally at any rate a Parmenidean Sphere.

But just as Parmenides had revolted from the Pythagoreans, so Empedocles in his turn rebelled against the extreme conclusions of the Eleatics. He might be persuaded by their arguments that Reality must be changeless and eternal and that empty space cannot exist, but he could not agree to their further deduction that therefore the everyday world of change, motion, and multiplicity is all "hypnotism," false opinion, and illusion. The reason is not far to seek. The cast of his mind was quite different from that of Parmenides. Parmenides was a born logician, Empedocles a born experimental scientist, turned philosopher. It was the native impulse of the one to start from a logical principle and deduce his system at all costs from the exigencies of pure reasoning; of the other to start from the perceived data of the everyday world and build according to the suggestions of observation and experiment. Furthermore, the fields in which Empedocles was most interested—medicine, physiology, natural history, and the like—were just those in which movement and change, generation and dissolution, were most marked. He could scarcely be expected to accept without examination the results of a logic which proclaimed all natural phenomena unreal, made all scientific re-

search mere idle dalliance along the Way of False Opinion and rendered his favorite studies particularly ridiculous.

His problem, then, was to justify his interest in natural science in the face of Eleatic reasoning. He may possibly have also had in mind a reconciliation of Heracleitus' views with those of Parmenides. The question, however, of the extent, and indeed of the existence, of Empedocles' debt to Heracleitus is disputed and obscure.[16] In any case, with or without Heracleitus in mind, he daily perceived and studied the Many, their flux, their movement and interchange, their apparent coming into and passing out of being. And yet the Eleatics had persuaded him that any real coming into being or passing away was out of the question, and brought forward the most cogent arguments against the possibility of multiplicity and motion. Could the evidence of his senses be reconciled with the exigencies of their logic?

So far as motion was concerned the non-existence of an empty space to move in need not have troubled him. Descartes later denied the existence of a vacuum and still successfully asserted motion; and within the Parmenidean sphere of solid, continuous Being circulation and change of place were still conceivable. The Sphere might even have spun on its axis like a top, and yet been stationary. But Empedocles is not driven to these expedients. Though he denies the possibility of a void he surreptitiously admits it, when, as we shall see in a moment, he conceives of Reality as a loose mass of particles between which chinks and interstices, and therefore free play and interpenetration, exist. The Eleatic truths, then, need not preclude the possibility of movement.

The question of multiplicity and variety proved a harder nut to crack. The old Milesian assumption that the One can juggle itself into a Many had been shown up by Parmenides. If Reality is simple and homogeneous, the distinction of one thing from another must be unreal. But need Reality be conceived as One? Cannot the Many be equally indestructible and changeless? Might not even the Sphere be compounded of dif-

[16] *Cf.* Zeller, *Pre-Socratic Philosophy*, p. 202; Burnet, *Early Greek Philosophy*, 3rd ed., p. 227.

ferent elements without prejudice to its eternal and unalterable character? Whether or not Empedocles punctuated with just these interrogation points his questioning of Parmenides' doctrine, is immaterial. In any case they are answered in a pluralistic sense in the course of his speculations.

The Parmenidean Sphere he "quarters," as it were, and compounds it of Earth, Water, Air, and Fire. Incidentally he had differentiated air from the vapor or mist confused with it in the system of Anaximenes, and had proved experimentally that its seemingly empty transparency was really a substance like the others.[17] Why he hit upon four substances, and these particular four, has been much discussed and never settled.[18] He set, however, a fashion which struck the popular fancy and persists even to-day. Though they were long ago outgrown and discarded by science, the "four elements" are still a popular figure of speech. Empedocles also distinguishes them with the mythological titles, Hera, Zeus, Nestis, and Aidoneus. But as these titles play no part in his system, and their precise application is in dispute, we need not bother further with them.[19]

The problem of multiplicity and variety was now solved to Empedocles' satisfaction. All the surface complexity of the world as it appears to the senses could be reduced to forms of these four substances or different mixtures of them. "Behold the sun everywhere bright and warm, and all the immortal things that are bathed in heat and bright radiance. Behold the rain, everywhere dark and cold; and from the earth issue forth all things close-pressed and solid." [20] Of just what qualities in the sensible world Air is the substratum, he does not mention.

We start, then, in Empedocles' system with the four elementary substances, Earth, Water, Air, and Fire, each one of which, after the fashion of the Eleatic Reality, is uncreated and indestructible, unalterable, and incapable of transforma-

[17] *Cf.* Burnet, *Early Greek Philosophy,* 3rd ed., p. 229.
[18] *Cf.* Zeller, *Pré-Socratic Philosophy,* II, p. 127 *et seq.*
[19] *Cf.* Zeller, *op. cit.,* II, 125, note. Burnet, *loc. cit.*
[20] Fr. 21, Burnet, *Early Greek Philosophy,* 3rd ed., p. 209.

tion into anything else. Combined with this hypothesis we have the un-Eleatic and Heracleitan belief in the reality of motion, and the assurance that the kaleidoscope of phenomena can be explained as due to the varying mixture and separation in space of the four ultimate elements.

The case, however, is not so evident as it seems. For how does motion originate? The Sphere of Being is full to the brim of substances completely intermingled and dissolved in one another's natures. What is to shake them down? And after they have been isolated from one another, what is to shake them up again? The problem which confronted Empedocles was but a philosophic form of the difficulty which Roosevelt found in "unscrambling the eggs" when he set about breaking up the American Trusts.

Empedocles' realization that the existence of motion constitutes a problem marks a step forward in the development of philosophy. The Milesians had taken it for granted that the World-Stuff naturally moves and transforms itself. Furthermore, the solution which Empedocles offers is an advance in the direction of separating the concept of Energy and Activity from that of Matter. He does not himself arrive at the idea of Force as distinguished from the solid and corporeal aspects of the world, but he collects all the energy in the Universe and concentrates it in two dynamic, energetic substances apart from whose activity the four elements would be inert. The mixture and separation of Earth, Water, Air, and Fire is affected by the alternate give and take of Love and Strife. It is commonly considered that Empedocles thought these agents to be quite as corporeal in nature as the other elements, to which they are said to be equal in length, breadth, weight, and age.[21] The suggestion, however, has also been made that they are indications of the Greek habit, already noted in our discussion of Greek religion, of viewing the world as essentially a social order, and that they represent the transference to Nature of the opposed tendencies in human society towards tribal amalgamation and solidarity on the one

21 *Cf.* Zeller, *Pre-Socratic Philosophy,* II, p. 138; Fr. 17, Burnet, *Early Greek Philosophy,* 3rd ed., pp. 207-8.

hand and disintegration into smaller units on the other.[22] From this point of view they are "life-forces" or "vital-fluids," [23] expressions of that companionable feeling towards Nature which so long kept Greek religion from distinguishing between persons and things, and Greek philosophy from finding principles distinct from body for life and consciousness.

However that may be, they possess an animation and a "push" which the other substances lack. Love is the stuff or "fluid" which impels the four elements to mingle and fuse with one another, Strife the stuff which drives them apart, isolates them, and precipitates them from the fusion. It almost seems as if Empedocles were seeing through a glass darkly the modern forces of attraction and repulsion or even those mysterious substances known to the chemist as catalyzers, which with cynical indifference are always provoking reactions and stirring up trouble among the other elements in which they themselves are not involved or affected.

The picturesque and passionate character of these dynamic substances has provoked considerable discussion and speculation among critics from the time of Aristotle on. Aristotle, and later Plutarch, conferred upon their activities a moral significance, making Love the author of the good, and Strife the worker of the evil, in the world.[24] Aristotle, however, in another passage points out that the rôles of hero and villain are really interchangeable, since Strife in tearing the elements from the inextricable confusion of one another's embrace reunites the scattered particles of all four elements with particles of their own kind. Similarly, Love produces fusion only by breaking up the homogeneous masses of Earth, Water, Air, and Fire and driving them apart.[25]

It has also been maintained by a modern school of criticism that we have here a very real and extensive leakage from the religious and mystical compartment of Empedocles' mind into his science and philosophy. The alternate precipitation and

[22] *Cf.* Cornford, *From Religion to Philosophy,* pp. 60-63.
[23] *Ibid.,* pp. 151-152.
[24] Aristotle, *Metaphysics,* I, 4, 984*b*, 32. Plutarch, *De Is.* 48, p. 370.
[25] Aristotle, *Metaphysics,* I, 4, 985*a*, 21.

fusion of the elements by Strife and Love, are, it is claimed, the objective and cosmic counterpart of the fall and redemption of man. "The sphere is the body of God, and Love is the Soul which pervades it." [26] The intermingling of all things, intoxicated, as it were, by Love, is all of one piece with the original union of all souls with the divine. Strife is the principle which produces a multiplicity of beings, estranges them from Soul, allots them their limited natures, and submits them to the harsh yoke of necessity. The fallen soul has put her trust "in insensate strife." [27] The Golden Age is apparently placed at the very beginning of the epoch in which Strife overcomes Love. The Orphic fall of the divine into human form, and the breaking up of the Sphere would then seem to be only two sides of one and the same process.[28]

Here again, however, as in the case of the Orphic interpretation of Parmenides, we are treading on very difficult and debatable ground. The conservative view which minimizes the influence of Empedocles' religion on his philosophy has plenty of precedent in other philosophers and scientists, and is perhaps the safer.

Empedocles himself connects Love, more immediately at least, with his physiological observations of the sexual instinct in man and the other animals, and claims to be the first to note that the human passion is also a world-force. The antithesis, too, of Love and Strife would seem to have been suggested by the antithesis and alternations in the World-Process of birth and decay and of the apparent coming into and passing out of existence which his system tried to explain.

Having thus given himself matter and motion, Empedocles was now in a position to construct his world. The point at which he chooses to begin is the moment when Strife was altogether outside the Sphere, and the four elements, suffused and completely intermingled by Love, lay indistinguishable in the Sphere—"so fast was the god bound in the close covering of Harmony, spherical and round, rejoicing in his circu-

[26] Cornford, *From Religion to Philosophy,* p. 234.
[27] Cornford, *op. cit.,* p. 231, p. 236 *et seq.*
[28] Fr. 115, Burnet, *Early Greek Philosophy,* 3rd ed., p. 222.

lar solitude." [29] In the fullness of Time, Strife began to enter the Sphere and to precipitate the elements held in solution. Love began to retire slowly checking and offsetting Strife as it went. Eventually, when Strife had completely entered in and permeated all things and Love had been wholly squeezed out, the process of disentanglement was complete, and the four elements were altogether apart from one another. This period of isolation was followed by a reverse process, in which Love entered in and slowly gained the ascendency. Little by little Strife was squeezed out, till once more Fire, Air, Water, and Earth were completely fused in the Sphere.

The alternate ebb and flow of Strife and Love and the consequent separation and mixture of the four elements are apparently conceived as automatic, and Empedocles among others is taken to task by Plato for having taught that the creation of the world is effected "not by the action of mind . . . or of any God, or from art, but . . . by chance and nature only." [30] Mixture and separation are accomplished by the elements "running through one another." This they can do as their masses are loose and porous, and the holes in the coarser elements are larger than those which break up the finer substances. Earth, then, can soak up or squeeze out water, Air can permeate the chinks and crannies between the water-drops, and Fire can find its way in and out of the interstices of the Air. Love and Strife, it would seem, can even go through Fire, and insinuate themselves everywhere. That this loose-laid character of the elements implied the existence of empty space Empedocles did not seem to realize.

When the counterwise tides of Love and Strife are just at the turn, and the elements are either wholly fused or completely precipitated, obviously no Universe can exist. The formation of a world can take place only during the periods when intermingling or separating is still in process. The world in which we are living belongs, Empedocles thinks, to the period in which Strife is in the act of casting out Love.

The way in which our world arises is as follows. First, Air

[29] Fr. 27, Burnet, *Early Greek Philosophy*, 3rd ed., p. 210.
[30] Laws X, 889b.

is separated out, then Fire, and then Earth. Fire rushes up and solidifies a portion of the Air into a sort of crystalline egg-shell surrounding the Universe—a reminder perhaps of the Orphic world-egg from which the God Phanes was hatched. It attaches itself here and there in spots to the crystallized Air, and forms the fixed stars. Below the upper portion of the egg-shell a hemisphere of Fire is created. The upward rush of Fire also causes displaced Air mixed with Fire to sink below the earth and form a corresponding hemisphere. It furthermore makes the sphere as a whole top-heavy and sets the heavens in motion. The revolution of the sphere, presenting a face now of Fire, now of Air, to the earth produces the alternation of day and night. The sun is the light poured down by the fiery hemisphere upon the earth and reflected from its surface upon the heavens. Here we perhaps detect the echoes of the Pythagorean doctrine of a central fire about which the sun revolves and from which it gets its light. The moon is a crystalline body which reflects the light of the sun. The planets are made of the fire pressed down with the displaced Air. The Earth is precipitated to the center, and Water is separated from it by the squeezing due to increasing pressure. The spinning motion of the Universe acts like a sort of cosmic gyroscope, and holds the earth and the heavens in their proper places.

Of the origin and development of life Empedocles gives us an interesting account which, like the views of Anaximander, forestalls to some extent the Darwinian theory of evolution. A certain mixture of the four elements forms the primitive organic compound, or, as we might say, the "protobion." The Love which still holds this mixture together is being slowly overcome by Strife and each of the elements is seeking to be precipitated and united with its own kind. The complications which ensue form first vegetable, and then animal, life. To vegetable life Empedocles attributed bi-sexuality—a fact rediscovered by modern botany—as well as sensation, pleasure and pain, and even desire. The upward growth of plants is due to the striving of the Fire still mixed with Earth and Water to shake itself

free and unite with the upper hemisphere; their downward rooting to Water and Earth sinking each to its respective level.

The separation of Fire from the other elements also causes the evolution of animals and man. "Whole natured forms first arose from the earth, having a portion both of water and fire. These did the fire, desirous of reaching its like, send up." [31] As yet the sex and species of these forms were unrecognizable. The origin of species as well as the distinction of sex would be incidental to the further separation of the elements, caused by the increase of Strife. Such species as were "better suited to it took to the water; others were wafted up into the air for such time as they possessed more of the fiery matter, and the heavier remained on the earth." [32] Curiously enough, however, the species that took to the water seemed to have been the "warmest and the most fiery" which "sought refuge from the excess of their natural heat" and from "their lack of cold and wetness." [33] Meantime Love, still present though receding, would preserve the organic mixture, keep it molded in animal bodies and organs, and insure reproduction.

Even more striking, however, is the picture given of the evolution which occurs in the antipodes of our world-period when Strife has passed its flood, and the Universe is being reconstituted by the rising tide of Love. The first organic mingling of the elements takes the shape of a chaos of scattered limbs and organs, "heads . . . without necks, arms . . . bare and bereft of shoulders . . . eyes . . . in want of foreheads," [34] which "wander seeking for union." [35] These limbs and organs are thrown together by chance, and united in all sorts of haphazard and fantastic ways. "Many creatures with faces and breasts looking in different directions were born; some, offspring of oxen with faces of men, while others, again, arose as offspring of men with the heads of oxen, and creatures in whom the nature of women and men was mingled. . . ." [36] The creatures

[31] Fr. 62, Burnet, *Early Greek Philosophy*, 3rd ed., pp. 214-5.
[32] Aet. V, 19 (Diels, *Doxographi græci*, 430).
[33] Aristotle, *De Resp.*, 14, 478*a*.
[34] Fr. 57, Burnet, *Early Greek Philosophy*, 3rd ed., p. 214.
[35] Fr. 58, *loc. cit.*
[36] Fr. 61, *loc. cit.*

which prove to have "spontaneously acquired a fitting structure" [37] survive, whereas the unsuitable combinations perish. The fauna and flora, then, including the human beings, of the period dominated by Love are the results of a true Darwinian evolution, the direction of which is explained entirely by chance, by the struggle for life, and by the survival of the fittest. And just as the Nineteenth Century clergy denounced the Darwinian theory as godless and clung to the "argument from design," so Aristotle with something of their severity, but, it should be said, with nothing of their invective, attacked the mechanistic character of the Empedoclean theory with his favorite argument that things come into existence and develop their characteristic structures not by chance or from mechanical necessity, but in order to perform a certain function and fulfil a specific purpose.[38]

Empedocles was also a keen physiologist. His theory of evolution was supplemented from the field of comparative anatomy with various analogies between the structure of animals and plants. He thought, for example, that "hair and leaves and thick feathers of birds and the scales that grow on mighty limbs are the same thing." [39] He also developed theories of reproduction and nutrition and has left a long passage on the nature of respiration which leads in the direction of Harvey's discovery of the circulation of the blood. The blood, he says, pulses to and fro between the surface and the interior of the body. When it recedes inwards from the limbs the air streams in through the pores as well as the mouth and nose, to take its place; and when it returns towards the surface the air is expelled and "breathes out again in equal quantity." [40]

The "budding-off" of psychology as a special field of philosophic interest and investigation progresses rapidly in Empedocles' system. He does not, as we have seen, distinguish consciousness from the other aspects of the Universe any more clearly than did the Milesians or Heracleitus or Parmenides.[41]

[37] Aristotle, *Physics*, B, 8, 198*b*, 29 (trans. Burnet, *op. cit.*, p. 243).
[38] *Physics*, B, 8.
[39] Fr. 82, Burnet, *Early Greek Philosophy*, 3rd ed., p. 217.
[40] Fr. 150, *Ibid.*, p. 220.
[41] *Cf.* Gomperz, *Griechische Denker*, I, 2, v, § 5.

Just as Xenophanes' God "sees all over, thinks all over, and hears all over," so for Empedocles "all things have wisdom and a share of thought," [42] and in ourselves it is the basic substances mixed in the human body which think and feel pleasure and pain.[43] In the case of human beings, however, he tends to localize the seat of consciousness. He finds the part of the body "in which men's thought chiefly revolve" to be the blood, and particularly the blood round the heart. "The blood round the heart is the thought of men." [44] He chose the blood, we are told, because "in it of all parts of the body all the elements are most completely mingled." [45] Incidentally, the different capacities, temperaments, and humors displayed by mankind are the expressions of varying conditions and proportions in the mixture.[46] Again "sleep is a moderate cooling of the warmth of the blood, death a complete cooling," [47] due to the partial or entire separation of the Fire that is in a man from the other elements.[48]

It is, however, for its theory of perception that Empedocles' psychology is famous. The general principle is that "like perceives like." The Earth, Water, Air, Fire, Love, and Hate mingled in our bodies perceive each its kindred element in the external world. This sensitiveness of the elements within to the corresponding substances without is a matter of the similarity of their pores. Particles of Fire, for example, will dovetail with one another, whereas particles of Fire if fitted into the spaces between water drops would be like round pegs in square holes. External objects are continually giving off "effluences" as a result perhaps of the action of Strife in driving the elements apart. These effluences strike upon the body, enter the sense-organ whose pores are fitted to receive them, and are picked up by the like element within. Smell and taste are due to the contact of particles carried into the nose by the inbreathed Air,

[42] Fr. 110, Burnet, *op. cit.*, p. 221.
[43] Fr. 107, *Ibid.*, p. 220.
[44] Fr. 105, *loc. cit.*
[45] Theophrastus, *De Sensu*, 10 (trans. Burnet, *op. cit.*, p. 247).
[46] Theophrastus, *De Sensu*, 11.
[47] Aet. V, 24.
[48] Aet. V, 25.

or into the mouth by moisture. Hearing is the result of disturbances in the Air which enter the ear and make it resound. Of sight, Empedocles has a more complicated explanation. The eye is composed of Fire and Water. Particles of these glance out and meet the corresponding effluences from external objects. The Fire sees the bright, the Water the dark.[49] Pleasure, pain, and desire are also linked up with the affinity of like for like.[50]

Empedocles' utterances on the trustworthiness of perception and the relation of sense to reason [51] are not developed and are not altogether clear. According as they are punctuated, they may voice either a mild distrust of perception and an insistence on checking and correcting the reports of the senses by the opposed activity of reason,[52] or a plea not to withhold confidence from any of the sensory channels by which understanding in no wise opposed to perception may enter in.[53] But whichever interpretation be true, Empedocles did not lean far enough in either direction to fall into the problems of error and knowledge, and the question of Appearance *vs.* Reality. The senses introduced him to the Fire, Air, Water, Earth, Love, and Strife, which constituted his Universe. It was equally obvious that their presentations did not altogether acquaint him with the "home life," the relations, and the movements of these elements, and even suggested false ideas about them, such as their apparent coming into and passing out of being. Hence, in addition to perception some checking up by the exercise of common sense and thought was necessary, if he was to get a true view of things as they really are. Beyond this point, except for a rhetorical lamentation over the brevity of human life, the inadequacy of man's powers, the propensity of others to jump to hasty conclusions, and the difficulties of working

[49] For a more detailed discussion of the theory of sensation, *cf.* Zeller, *Pre-Socratic Philosophy,* II, pp. 165-166; Burnet, *Early Greek Philosophy,* 3rd ed., pp. 246-248.

[50] *Cf.* Zeller, *Pre-Socratic Philosophy,* II, p. 171.

[51] Fr. 2, Burnet, *Early Greek Philosophy,* 3rd ed., p. 204.

[52] Zeller, *Pre-Socratic Philosophy,* II, pp. 169-170.

[53] Burnet, *Early Greek Philosophy,* 3rd ed., p. 227. *Cf.* 2nd ed., pp. 219, 268.

out a philosophic system (difficulties, however, with which he feels himself able to cope), Empedocles' theory of knowledge does not go.

The affinity between medicine and philosophy which we find in Empedocles has lasted till to-day. In the great Skeptic, Sextus Empiricus, who lived at Alexandria about 300 A. D., in Avicenna and Averrhoes, the mediæval Arabian followers of Aristotle, in John Locke, the father of British Empiricism, and in the American, William James, we have other illustrious examples of the physician turned philosopher. Nor should we forget the medical and physiological studies with which Plato, Aristotle, and Lucretius in ancient times, and Descartes in modern, accompanied their metaphysical speculations.

For a while, too, the theory and practice of ancient medicine tended to be governed by philosophical considerations. The so-called father of medicine, Hippocrates of Cos, who was a contemporary of Empedocles, had rejected the view that some diseases, like epilepsy for instance, are of divine origin. All, he said, are equally God-sent, if you like, but none occurs without a natural cause. Doctors, however, for want of recourse to the will of God, began to take refuge in philosophy. Equivalents for the various fluids and substances in the body were sought in the World-Stuff, and the natural causes of illness were found in the relations of metaphysical principles. Diseases were instances in the human body of an upset of the balance of opposites or a lack of equilibrium between Fire, the principle of motion, and Water, the principle of nutrition, and were to be treated accordingly. To cases of too much wet the dry must be administered; as a remedy for a superfluity of cold, the hot was indicated. A sort of comparative anatomy of man and the universe likewise grew up. The stony structure of the earth was likened to the human skeleton, the water in the rivers to the blood in the veins; [54] and the parallel was even carried to the point of comparing the Peloponnesus to the head, Ionia to the diaphragm, and Egypt to the belly.

But this method of interpreting and treating the human body

[54] Gomperz, *Griechische Denker,* I, 3, i, § 4. For a similar analogy *cf.* the beginning of Leonardo da Vinci's *Trattato de l'Acqua.*

and its ailments met almost immediately with vigorous criticism and opposition. Treatment, it was maintained, should be governed not by hypotheses but by observation of individual cases. Disease was too complicated a condition ever to manifest in its symptoms unalloyed cosmic principles, like fire and water, the wet and the dry, or to permit of the administration of them as a cure. Philosophical entities had no more to do with healing a patient than with painting a picture, and Empedocles, along with other physicians and thinkers, was to be severely blamed for approaching medicine and physiology with a philosophical bias.[55]

The controversy thus initiated lasted long in the history of ancient medicine. The philosophic background faded, but the doctors continued to dispute whether abstract generalization and deduction, or observation of the particular case, should play the more important part in treatment. The last outburst of the controversy took the form of the uprising at Alexandria of a new empirical movement of protest against the dogmatism which by this time had infected the assertions of all schools alike. By Sextus Empiricus, an adherent of this movement, the revolt was carried back from the field of medicine to that of philosophy, and at the end of seven centuries the whirligig of time had another of its revenges in this reversed, skeptical alliance of the philosopher and the doctor.

Before passing on to Anaxagoras, who stands next on our list, let us review and consolidate our impressions of Empedocles. We have been dealing with a not uncommon type of man who can be without confusion or contradiction both a keenly observant, careful empirical scientist and philosopher, and the fervent devotee of a mystical religion and even of superstition and charlatanism. Empedocles drew his mystical religion from Orphic sources probably through Pythagorean channels, his medical training from the Pythagoreans, and his philosophy directly from the Eleatics, with some admixture perhaps of Heracleitan influence. He accepts Parmenides' view that any real coming into and passing out of being are unthinkable and that hence the World-Stuff must be eternal and unchangeable,

[55] Gomperz, *op. cit.*, I, 3, i, § 5.

but his "empirical" habit of thought revolts against the further conclusion that the multiplicity, change, and motion of the everyday world are therefore unreal and illusory. His problem as a philosopher is to save the reality of the world in which he takes so keen a scientific interest from being annihilated by the Eleatic logic.

His solution is as follows:—Against Parmenides he asserts, though he does not argue, the possibility of the existence of the Many, and of movement in space. The Eleatic Reality he analyzes into four basic, inert stuffs, Fire, Air, Water, and Earth, and two dynamic, active elements, Love and Strife. Each of these substances is as eternal and unalterable in its nature as Eleatic Reality. But, since movement in space is possible, the four inert stuffs can be intermingled or separated out, as the case may be, by the two active agents. The multiplicity, variety, change, and seeming coming into and passing out of being in the everyday world can then be explained as the mere motion, juxtaposition, and dispersion in space of many changeless and indestructible Parmenidean Ones.

A livable world can only exist when the process of fusion or separation is still going on. For when the process is accomplished the elements are either all massed and indistinguishably mingled in a compact Eleatic Sphere, or else wholly precipitated from one another and foregathered each with its own kind. The world in which we live is incidental to the slow breaking up of the Sphere and isolation of the elements under the influence of Strife.

The astronomical portion of Empedocles' account of the formation of our world is of comparatively little interest. When, however, we come to his speculations regarding the origin and development of life we find a theory of evolution which goes well beyond Anaximander's teaching that man has been developed out of lower forms of life in accordance with a general law of modification of structure by environment, and forecasts the accidental variation, the struggle for existence, and the survival of the fittest that play so large a part in the Darwinian theory. This doctrine of evolution is supplemented in the field of comparative anatomy by interesting observations

on the similar laws which govern the development both of plants and animals, and on the analogous structures and functions which occur in both animal and vegetable forms of life. We mentioned also Empedocles' physiological studies of reproduction and nutrition, his observation of sex in plants, and his theory of respiration as related to the movement of the blood which verges on Harvey's discovery of circulation.

In the realm of physiological psychology, we should especially note his famous theory of sensation as a perception of like by like, and the essential correctness of his suggestions regarding the nature of taste, smell, and hearing.

The undeveloped state of his views on the relation of perception to reason does not warrant us in attributing to him a theory of knowledge or any preoccupation with the problems of error and of Appearance *vs.* Reality.

## II

The next philosopher to whom we come is Anaxagoras. Born about 500 B. C. of a noble family of Clazomenæ, a town not far from present-day Smyrna, he was somewhat older than Empedocles. But, as a passage in Aristotle may mean that his system was matured and published after the appearance of Empedocles' poems,[56] and as his views mark an advance in the development of the atomic theory, we are justified in having deferred our consideration of his teaching. He seems as a young man to have become fascinated with philosophy, and to have exhibited some of the symptoms popularly believed to be characteristic of this passion. Many anecdotes recount his amiable peculiarities. For love of knowledge he is said to have neglected his worldly goods and at last to have turned his property over to his relatives. Unlike most of the other philosophers whom we have been considering, he took no interest in the politics of his city. When reproached for this lack of public spirit he replied by pointing to the sky as the fatherland which he loved; and again when asked what he had been born for at any rate, he answered, to gaze at the stars. All in all he

[56] Burnet, *Early Greek Philosophy*, 3rd ed., p. 261, note 1.

seems to have been like Thales, a somewhat eccentric, absent-minded, Johnny Head-in-Air sort of person, very much wrapped up in his own thoughts. That these were kindly, as well as profound, is to be seen in the desire expressed in his will that the children of Lampsacus, the town where he had passed his last days, should be given a holiday from school, each year, on the anniversary of his death.

The life of Anaxagoras is chiefly identified with Athens and with the splendors of the Periclean age. In discussing Melissus in his rôle as a Samian admiral, we saw how Athens, under the leadership of Pericles, transformed into a powerful maritime empire the Confederacy of Delos, which had started as a mere defensive alliance of certain coast and island states against possible further aggression on the part of Persia. The reduction of the greater number of her co-partners to the condition of vassals had been hastened by the transfer of the common treasury of the League from Delos to the Acropolis, and by the lazy habit, into which all but a few of the stronger confederates fell, of paying Athens tribute money in return for protection, instead of contributing a quota of ships and men to the common safety.[57] Thus the confederate fleet, being almost entirely Athenian built and controlled, not only secured the League as a whole from foreign aggression but also insured the naval supremacy of Athens over her so-called allies, and made her the capital and mistress of a far-flung empire of isles and coast-lands which encompassed the Ægean, and had its outposts in the Euxine and the Propontis, in Egypt, Phœnicia, and Sicily. Under the ægis of her sea-power a great expansion of trade and commercial prosperity took place, of which she got the lion's share. And as she felt justified, on the whole, in reserving for purely home uses any surplus of the tribute which might remain after the obligation of protection had been fulfilled, she quickly accumulated both in private fortunes and in public treasure the wealth which has always been a prerequisite of all the great "floreats" of civilization.

At the same time the opportunities and responsibilities of an imperial position unfolded the capacities of the extraordinary

[57] *Cf.* Thucydides, I, 99.

Athenian genius. By nature and education the Athenians were a nation of energetic, enterprising, and adventurous businessmen who loved novelty, experiment, and risk. But this commercial and practical flair for making a living was enlightened by qualities of mind and taste which taught them also how to live. It was inborn in them to perceive and prefer the beautiful, and to feel that the noblest of human satisfactions lay in resetting the world as a stage to the living of life as a fine art. Their passion for beauty was, however, reinforced and steadied by an almost sensual pleasure in thinking. They loved just for the "*frisson*" it excited, the sensation of reflecting and knowing. By instinct, as it were, they were excited and guided to the use and enjoyment of their minds, not as a mere economic tooth and claw for gorging the material wants of existence, but as a discriminating and delicate palate for apprehending and savoring the subtle delights of the flavor of human life. This innate sensitiveness to beauty and to the uses of the intellect as an instrument of pleasure permeated all classes and interests. The average intelligence of the whole mass of Athenian citizens in town-meeting assembled has been ranked above that of the British House of Commons forty years ago, when its members were still almost altogether aristocratic by birth or university bred.[58] And the perfection and universal dissemination of taste has never since been even approached, save perhaps by the Japanese in the days before the keen edge of their instinctive perception and creation of beauty had been blunted and turned by contact with Europe and America. Only in the courts of the Ionian tyrants, and of the culture-mad despots of the Italian Renaissance can we find the peer of the spirit with which at Athens a whole people was suffused.

Of all this wealth and genius Pericles made himself the master and the center. Like those other great patrons of splendid ages, Augustus Cæsar and Lorenzo the Magnificent, he utilized the old republican form and machinery of government for the maintenance and exercise of his power, but he reigned no less

[58] Freeman, *History of Federal Government*, I, p. 37 *et seq.* Quoted by Mahaffy, *Social Life in Greece*, p. 255. *Cf.* Ferguson, *Greek Imperialism*, pp. 57, 65.

and perhaps even more truly than they. "Deriving authority from his capacity and acknowledged worth, being also a man of transparent integrity," says Thucydides, "he was able to control the multitude in a free spirit; he led them rather than was led by them. . . . Thus Athens, though still in name a democracy, was in fact ruled by her greatest citizen." [59]

Of the imperial destiny of Athens Pericles dreamed a great dream. Her glorious part in the Persian War still fired the imagination of men. Even the Theban Pindar, though during the struggle he had been pacifist and neutral to the point of uttering no protest when his own city welcomed the Persians, had cried out in spite of himself, "O shining, violet-crowned city of song, great Athens, bulwark of Hellas, walls divine." [60] And Themistocles, whose will and daring had sustained and helped bring her safely through the ordeal, had seen her enthroned in the splendor of her victory as the capital of a united Greece and perhaps of the whole Mediterranean world. This vision of political dominion Pericles enlightened with the ideal of spiritual supremacy. He saw Athens also crowned with laurel, and exalted in honor, the shining capital of civilization. It was her mission to be the "school of Hellas," as he calls her in his famous Funeral Oration, privileged to teach by her example how noble man and how beautiful the world might be. The test and justification of a democracy, he felt, lay not in leveling all men into commoners but in elevating them all into noblemen. Equality, if it implied that those who possessed breeding and manners, taste and intelligence, were no better than those who did not, was a lie. Freedom meant not the evasion of aristocratic ideals but a permission to a whole people to be ranked as gentlemen if, but only if, they would behave as such. That democracy should and might mean aristocracy made universal was, as Pericles saw it, the Athenian message to the world.[61]

But when it came to realizing this ideal the Athenians were not altogether as clay in the potter's hands. They were quick

[59] Thucydides, II, 65 (trans. Jowett).
[60] Fr. 76 (trans. Murray, *Ancient Greek Lit.*, p. 178).
[61] *Cf.* Ferguson, *Greek Imperialism*, p. 64 *et seq.*

in learning to think imperially in matters of domestic and foreign policy. Like the Japanese, they were conscious and proud as a people of their innate sensitiveness and amenability to the refinements of human life and of the distinction which these thoroughbred qualities, inbred in the multitude, conferred upon them. They shared Pericles' patriotism and his enthusiasm for pouring out their public and their private wealth in the service of the city for which they had had so lately, and were so soon again, to pour forth their blood.[62] And they rejoiced with him at seeing their love of Athens and their pride of empire, their genius and their ideals, at last expressed and enshrined in monuments whose ruins still remind the world that beauty was once within the reach of man.

Across this splendor, however, there lay a shadow, all the darker for the contrast, through which even Pericles in the end could not see his way. The keen curiosity of the Athenians, their hospitality to new ideas, their delight in looking on at life, their passion for thinking and reflecting—all these were stopped short of science and philosophy by an indifference to inquiry and speculation, and by a blank wall of theological traditionalism and intolerance which forbade the spirit of investigation to trespass on the grounds of the established religion. In their dealings with the divine the Athenians were as old-fashioned, as bigoted, and as superstitious, as they were enlightened and progressive in their love of surveying and embellishing the spectacle of human existence. Their curiosity, their restlessness, and their enterprise urged them to extend their empire to the uttermost ends of the earth, but woe to the adventurous mind that reported any new thing of the Gods whom the city worshiped!

Athens, then, in spite of her artistic temperament, her culture, her love of thought and conversation, was no place for untrammeled scientific and philosophic investigation. Not only her out-and-out philosophers, but her philosophic poets suffered from the presence of these forbidden topics; just as in modern times, in Anglo-Saxon countries, both literature and science have been impeded by a constitutional fear of countenancing any

62 *Cf.* Murray, *Four Stages of Greek Religion,* pp. 96, 97; Bury, *History of Greece,* Vol. I, p. 398 *et seq.*

investigation or facing any truth which might shock British respectability or corrupt a belief in the superiority of American ideals. This may be the reason why Athens, in spite of her brilliancy and her attractions as an imperial capital, failed to attract or to hold so many brilliant minds. The charm of the Periclean court could not persuade the historian Herodotus to settle definitely there, and the philosopher Democritus, rich and free to live where he chose, preferred to travel or to live at Abdera. Even the poet Æschylus, it has been suggested, for all his piety and Miltonic Puritanism found the atmosphere too stifling, and used to visit Sicily for air. Perhaps, too, Euripides found the concealed irony and skepticism with which he edified the religious majority, and entertained the cynical minority, of his audience, an insufficient vent for his revolt, and sought relief at last in the *grandes espaces* and the *pleins airs* of the New World of Thrace.[63] Sophocles was more fortunate in having in Pericles a near-by refuge.

In this matter of religious intolerance Athens contrasted very unfavorably with the Greek cities of Asia Minor and Magna Græcia. It may be, as we remarked in discussing the Milesian School, that the "continental" situation of the Ionian cities and the proximity of Sicily and Southern Italy to the foreign civilizations of Carthage and of the Italian peoples accustomed them to the presence and importance in the world of non-Hellenic institutions, ideals, and Gods, and mellowed them with a cosmopolitan sense of the relativity of morals and theologies.[64] In any case the Ionians and the Magna Grecians were keen investigators and speculators by nature, fearless of any truth to which scientific or philosophic inquiry might lead. Among them one could hold and express what religious or irreligious beliefs one chose without danger of molestation or ostracism, and even with no uncomfortable feeling of being out of tune with one's environment.

Athens, on the other hand, whose immediate neighbors were all and wholly Greek, and, with the exception of Corinth, rather hidebound, lacked cosmopolitan experience, and was not to be

[63] *Cf.* Holm, *History of Greece,* II, p. 293.
[64] *Cf.* Lange, *History of Materialism* (Eng. trans., 1877), I, p. 33.

shaken out of her theological provincialism and her old-fashioned ideas even by her imperialism and the new and close ties which knit her to broad-minded and free-thinking dependencies. If anything, the new contacts only settled her the more firmly in her old-fashioned ways, and excited against Ionian ideas and influence a prejudice very similar to that which the "one-hundred per cent American," to use a cant and popular American phrase, entertains against European culture in general, or the insular Englishman used to express against "atheistic," "immoral," and "frivolous" France. The Ionian, however, who crossed the Ægean to Athens had his revenge. Save that to-day the forbidden topic about which no disturbing truths may be aired or unearthed is the nature of the good rather than of the Gods, he must have been oppressed with much the same feeling of loss of essential liberty as astonishes the Parisian on arriving in London, or as half amuses, half irritates, the European on entering the United States.

A man with such vision as Pericles, and master of a people possessed of such virtues and shortcomings, naturally became the rallying point not only for the writers and artists who expressed the Athenian genius, but also for the liberals and free-thinkers who were suppressed by the Athenian narrow-mindedness. So it was that both deliberately and unconsciously he gathered about himself the brightness of the Athenian glory, and became the focus of the splendor to which he has given his name. In forming this brilliant circle he owed no little help and inspiration to his mistress, or perhaps we should say, in view of his constancy and the fact that the Athenian law forbade legal marriage with foreigners, his morganatic wife, Aspasia. She was a Milesian, whose past, although it had been associated only with a very select few, was still not altogether above reproach. But she was faithful to Pericles, and as she added charm, wit, intelligence, a genius for conversation (as the Europeans, and particularly the French, understand it), and a talent for housekeeping, to her beauty, she made of herself one of the famous hostesses of all time. In her skilful hands the house of Pericles became the stage for a "salon" which was

frequented not only by all the great men, but by the more emancipated women of the day.

Into this circle Pericles tried also to draw distinguished "colonials" and foreigners, just as the despots of the Italian Renaissance vied with one another in attaching famous men to their courts, irrespective of nationality. But he had in mind a nobler goal than the mere acquisition of another lion for the Periclean or even the Athenian garden. He wished, if possible, to overcome the blind spot in the point of view of his fellow-citizens by subjecting them to a course of Ionian enlightenment. It was not that he underestimated their virtues of piety and patriotism or failed to appreciate their extraordinary sensitiveness to beauty. But he saw that without liberality of thought and interest in science and philosophy, their experience of and reflection upon life must necessarily be one sided and incomplete. If only he could graft the Ionian breadth of vision and mind upon the purity of taste, the physical energy, and the pride of city and empire which characterized his countrymen, then his dream of Athens as the "school of Hellas" and the capital of civilization as well as of the world would be near to coming true.

Pericles, however, had set himself a task beyond both his own powers and the capacities of his people. No nation, however quick, versatile, and brilliant, could change its spots and assimilate a new culture at the behest of one man, or within the span of a single lifetime. The Athenian defects were shortcomings which can be overcome only by many generations of experience, and disillusionment, and reflection, and slowly increasing perception of "what things can and what things cannot be," not to speak of what are really worth while.

The immediate result of Pericles' superior field of vision and profundity of insight was that he himself got the reputation of being an "Ionio-maniac," and that those who shared his views laid themselves open to the vague and dreadful charge of being "un-Athenian" in spirit, and were correspondingly suspect in the eyes of the mob. Such accusations proved a powerful weapon in the hands of his enemies, who let no opportunity slip for wounding him politically by charging his friends with impiety towards the Gods of the city—or to put it in modern

terms, towards the social and moral shibboleths of the people—and by thus seeking to arouse and enlist against him the provincial patriotism of the Athenian. Aspasia naturally was a favorite object of disfavor. Next to the nature of the Gods the Athenians were perhaps most bigoted about the position of women, who, they thought, should be neither seen nor heard, but kept in their proper position of almost Oriental seclusion in the home. Aspasia defied their two pet prejudices. Her unveiled and independent behavior, her habit of conversing familiarly and on equal terms with men, and worse still, her habit of inviting the legitimate wives of respectable citizens to do so too, scandalized the old-fashioned, and sowed seeds of feminism in Athenian households which brought the scandal home. These loose foreign ways coupled with her Ionian liberalism, her patronage of dreadful, free-thinking scientists and philosophers, and her vulnerable past rendered her a popular target for scurrilous jest and even for serious, if malicious, attack. Once indeed she was haled into the courts on the double charge of impiety and of using her salon as a means of procuring other men's wives to be Pericles' mistresses; and only Pericles' eloquence and influence secured her acquittal.

But who were Pericles' friends and the frequenters of Aspasia's salon? In order to answer this question, let us drop in and look about for a moment at one of Aspasia's evenings at home. The first to be pointed out to us would very likely have been the sculptor Pheidias. He was Pericles' right-hand man, so some friendly social reporter might have informed us, and his minister, as it were, of fine arts and public works. Together they had worked out the plans for making Athens so beautiful, and it was he who had supervised all the laying out of the building. He had "done" with his own hand the frieze of the Parthenon and the great statue of Athene, all ivory and gold, up on the Acropolis. Now he was just home from Olympia, where he had been working on a colossal statue of Zeus. Those who had seen it said it was so wonderful that when you stood before it you forgot everything else—even all your own troubles and fears. Pheidias' position, though, was at the moment just a bit shaky. He had shocked and offended a lot of people by carving a figure of Pericles fighting a centaur on

the shield of Athene, which was thought quite blasphemous. The scandalmongers, too, were spreading the report that he had stolen some of the gold-leaf with which the statue was covered. The same silly *canard* had got about at Olympia also. It was a pity, for the people were so touchy and bigoted in religious matters. Let a story of that sort get going, and a man, no matter how high up, might easily land in jail.

The four men over there, the reporter might have continued, as our attention wandered from his gossip, were Ictinus and Callicrates, the planning and supervising architects of the Parthenon, and Mnesicles who planned the Propylæa by which one mounted the slope of the Acropolis and entered the precincts of the temple. Perhaps we had noticed a little temple to Victory on the right as we went up. Callicrates had done that also. The fourth man was a compatriot of Aspasia's, Hermodorus by name, a philosopher as well as an architect. Very likely they were discussing the merits of his new rectangular scheme of city-planning—a novel idea which he had got from the East and was applying at the Piræus down by the docks, and also at Thurii and Rhodes.

The man to our left was the poet Sophocles, a great personal friend of Pericles and one of his generals in the Samian war. He had done well enough in handling reinforcements and supplies, but he had had to be reprimanded for mixing business and pleasure, and when left by Pericles to conduct the siege he had been badly worsted by the philosopher Melissus, who commanded the Samian fleet. He had written, as we probably remembered, a tragedy called "Antigone" to celebrate his promotion. Talking with him were a fellow-tragedian, Ion, who was a colonial from Chios, and Damon, one of the most brilliant and cultivated men in Athens, a specialist in the theory of music, and reputed to have great influence with Pericles. Athens had another good poet, too, named Euripides, but he persisted in living over at Salamis, wrote his plays, they said, in a cave by the sea, and could not be persuaded to go into society or take any more part in public life than he had to.

Did we see the man just coming into the room? That was the well-known traveler and historian, Herodotus from Hali-

carnassus over in Asia Minor. He was always "on the go" and never stopped in Athens long at a time. It was whispered that he was employed by the government as a secret intelligence agent and kept them furnished with much more valuable information about foreign countries than was allowed to appear in the instalments of his book. Speaking of historians, the young man just taking leave of Aspasia was called Thucydides. His family were notoriously anti-Periclean, and he belonged to the opposition. But he much admired Pericles personally, and, it was said, meditated imitating Herodotus by writing a history of the times.

Had we noticed the group at the end of the room gathered about Pericles, who were discussing so vehemently among themselves? They were mostly scientists interested in the investigation of natural phenomena, and Sophists or teachers of rhetoric who instructed young men how to argue in the law-courts and make telling speeches in the Assembly. They were almost all out-and-out foreigners or from the dependencies. The tall, fine-looking man was Zeno of Elea, a pupil of the philosopher Parmenides. He could talk you into believing that black was white, and that motion and multiplicity and everything else one commonly accepted were quite self-contradictory and did not really exist. The man with whom he was arguing was a Sicilian Sophist from Leontini, Gorgias by name.[65] No wonder they seemed rather heated in their discussion, since Gorgias had beat him at his own game and demonstrated by his own methods that "what is" really is not. Standing beside them was another Sophist, Protagoras, a Thracian from Abdera. He said really quite dreadful things—that there is no such thing as a universal standard of right and wrong, for instance. And it was rumored that he had expressed uncertainty as to whether the Gods existed or not. He had better beware. Statements of that sort were apt to get one into trouble at Athens. The short, ugly, snub-nosed youth listening to them was called Socrates. He was of no birth, but Pericles

[65] This is, of course, an anachronism. Georgias did not reach Athens till after Pericles' death. But he was already famous at Leontini and is part of the brilliance of the Periclean Age.

and Aspasia were the last people to care about the sort of thing if a man were well-mannered, intelligent, and interesting. He was very brilliant, and was developing a habit of walking round the streets questioning people and showing them—and the by-standers—how inexact their ideas were and how little they really knew. Finally, we must certainly have a look at the older man by Pericles' side. He was an Ionian scientist whom Aspasia, it was said, had got Pericles to invite to Athens nearly twenty years ago. Pericles and he had been inseparable friends from the first, and he was supposed to have more influence with the great man than even Damon or Pheidias. He was also reputed to be largely responsible for Pericles' liberal and pro-Ionian ideas. The common people, however, who thought that Attica was the Gods' own country and all foreigners, particularly from overseas, were decadent, made fun of him. They had nicknamed him "Brains" [66] because he had written a book showing that Mind was the stuff which set the world going. You could buy it for next to nothing in the market-place. He had also declared in his book that the sun was not a God but a bit of fiery iron about the size of the Peloponnesus. This second statement was no joking matter. That sort of thing might be said and written perhaps in degenerate and atheistic Ionia, but god-fearing Athenian manhood would not stand for it. It had already raised quite a hue and cry among the pious and the orthodox. The yellow-press comic poets could be counted on to take it up. For that matter there was a story going the rounds that the opposition would make it the occasion for another anti-Periclean demonstration. He would be brought to trial for impiety and his association with Pericles would be used as a means for inflaming religious prejudice against the statesman. What was his name? Anaxagoras, son of Hegesibulos, from Clazomenæ.[67]

Had our friend the social reporter poured all this gossip into our ears, he would have been substantially correct. Pheidias

[66] This would appear a defensible translation of "Nous," used as a derisive nickname.

[67] The poetic license of these paragraphs and such anachronisms as have resulted demand perhaps apology.

was soon to be accused of embezzling part of the funds set aside for public works, condemned, and thrown into the prison where he died. And within a short time Anaxagoras, too, was to be brought to trial for the impiety of his utterances about the sun. That he had also made derogatory statements about the divinity of the moon as, for instance, that it was made "of earth and had plains and ravines in it" [68] rendered his case all the more serious. He, too, was condemned and imprisoned. But in some way he escaped, perhaps with Pericles' connivance, and fled home to Ionia. In three years' time Pericles himself was dead of the great plague which devastated Athens in 429 B. C., having lived to see the first stages of the long war that was to end in the dissolution of the Athenian Empire and the temporary reduction of Athens herself to a second-rate power. Anaxagoras did not long survive his friend or the age of which he had been one of the chief glories. He had taken refuge in the Milesian colony of Lampsacus, and there he died honored and mourned by the adopted country men of his exile and old age. As a memorial to him an altar dedicated to Mind and Truth was set up in the market-place and the little schoolboys were given each year the holiday he had asked for them.

We ought not to be less harsh, but we may be less hasty in our judgment of the Athenians' conduct towards Anaxagoras, if we reflect upon the history of our own times. We do not need to go back to Roger Bacon writing his scientific discoveries and theories in cipher in order to be safe, or even to Galileo recanting on his knees before the Inquisition his statement that the earth and the other planets revolve about the sun. We have only to look back some sixty years in England to the reception accorded the Darwinian theory of evolution and the attitude adopted towards its supporters. It was safe by that time to say that the sun was not a God but a fiery mass many times larger than Peloponnesus, and even that it did not revolve about the earth. But it still required courage and a willingness to brave disagreeable incidents to maintain that man was not specially created by a God, but was descended along with all other vertebrates from lower forms of life, and had outstripped

[68] Burnet, *Early Greek Philosophy*, 3rd ed., p. 271 (Fr. 10).

his brothers and cousins only by the workings of a chance and a natural selection which had sharpened his brains. Nor should we forget that there exist even to-day in the United States institutions of learning where exile is the penalty for advocating the evolutionary theory and that as late as 1922 the teaching of it came within an ace of being forbidden by law in the State of Kentucky. Another recent equivalent of the Athenian temper towards Anaxagoras is to be found in the curious state of mind, half bigotry, half panic, into which even the educated classes can be still thrown, most noticeably, perhaps, in America, by the mere question of any new discovery or hypothesis in the field of political and social science.

Anaxagoras seems to have received his first lessons in philosophy from instructors who counted themselves disciples of Anaximenes and successors to the Milesian heritage. But his opinions, like those of Parmenides and Empedocles, are to be understood as a reaction against his early teachers. In his divergence he was swayed by the doctrines of the great Eleatic. He found it as impossible as did Empedocles to escape the conclusion that there can be no such thing as coming into and passing out of being, and that therefore the quantity and properties of the World-Stuff must be invariable. And he was equally convinced that no real thing could turn into another, and that the apparent change of quality and transformation of natures which we see going on about us could not be taken at its face value, but required explanation.

At the same time, he was no more prepared than Empedocles to accept the extreme view of the Eleatics that change and multiplicity are false opinion and illusion, pure and simple. He preferred to steer the middle course already charted by the Sicilian and to reduce qualitative alteration to terms of the movement and transposition in space of fixed and unalterable elements. "Nothing," he tells us, "comes into being or passes away, but there is mingling and separation of things that are." We should therefore "be right to call coming into being mixture, and passing away separation." [69]

So far so good. Empedocles had helped him see his way out

[69] Fr. 17, Burnet, *Early Greek Philosophy*, 3rd ed., pp. 260-1.

of the woods. But once in open country again Anaxagoras felt that Empedocles was not following the right path. The four substances, Fire, Air, Earth, and Water, were too hard and too definite, too "divided and cut off from one another with a hatchet," [70] as it were. Moreover, they were too few. It was well-nigh impossible to make only four basic elements, however delicately mixed, account for all the infinite variety and complexity of phenomena. Nor could their sharp outlines afford a sufficient explanation for the haze, the indeterminateness, the "atmosphere," in which the countless objects and aspects of the phenomenal world are blurred and confused and melted into one another.

After all, thought Anaxagoras, perhaps there was something in the old notion of an indeterminate World-Substance such as his first teachers had impressed upon him. Such a substance need not be necessarily one and continuous. It might be a collection of particles free to move about in space. Moreover, its indeterminate character need not be merely a matter of quantity. It might be conceived as also qualitatively boundless—an iridescent mass shot through and through with every one of the innumerable qualities that we perceive in things, in somewhat the same way that opposites were mingled in the Heracleitan Fire. In that case no one portion or particle of it, however small, would be simply hot, or simply white, or simply sweet. Each molecule would be, as it were, a tiny prism possessed of all the iridescence and variety of the whole mass, hot and cold, black and white, bitter and sweet, all at the same time and fused beyond distinction into one. Only, in one particle there might be more sweetness than there was bitter or heat or cold; in another more cold than heat or taste or visibility; in still another more white than black or temperature or appeal to the tongue. The first we should call after its predominant quality, a particle of cold, the second, a little bit of sweetness, the third a molecule of white. Similarly any particle of the World-Substance with which we came in contact we should name after the quality in it which struck our senses most forcibly. But the prevalence in a thing of one property over

[70] Fr. 8, Burnet, *op. cit.*, p. 259.

all others should not cause us to forget that it, along with every other piece of World-Stuff, possessed to some degree all the qualities of the whole. "In everything," as in a well-shaken cocktail, "there is a portion of everything." [71]

These particles of mingled quality were called by Aristotle "homœomera," or things whose parts are of the same nature as the whole. The technical vocabulary of philosophy has taken over the word and its application, and perpetuated them. We need not, therefore, be dismayed if we meet now and then in philosophical literature with references to the "homœomera," or, to adopt a phrase used by later writers, the "homœomeriæ," of Anaxagoras.

We have used the words "quality" and "property," in order to express in our own thought and language the idea which Anaxagoras seems to have in mind. But we should do so advisedly. The distinction between a "thing" and its "qualities" which to us is so familiar and natural was still vague and little felt by philosophers. They made it, of course, continually, but unconsciously, when they used nouns and adjectives as different parts of their everyday speech; but the grammatical distinction had not yet received a philosophical meaning and application. It had occurred to Anaxagoras as little as the differentiation of mind from matter or of space from stuff had occurred to his Milesian forbears. These broader distinctions were, as we have seen, only just beginning to emerge from an idea of World-Stuff in general which was mind, life, matter, solidity, space, and everything else through and through and "all over." The more technical and sharply defined opposition of a "substance" to its "properties" required an even longer period of reflection to mature it.

So it is that we find Anaxagoras confusing in his particles of World-Substance the two notions of "property" and "thing." Hot, cold, dry, moist, and the like are real stuffs. The iridescence of qualities with which each prismatic particle shimmers is conceived as a complete fusion in the World-Stuff of many different material ingredients.

To what extent Anaxagoras carried this profusion of basic

[71] Fr. 11, Burnet, *op. cit.*, p. 259.

qualities or elements is a mooted point. An ancient commentator represents him as explaining the process of nutrition on the hypothesis that bread and water and other food contain minute particles of hair, veins, arteries, sinews, bones, and the other parts of the body.[72] Many modern historians, arguing from this passage, have imputed to him the belief that there are as many different sorts of molecules as there are kinds of natural objects. Fire, for example, would be composed primarily of fire molecules, but it would also contain, to a minor degree and imperceptibly, particles of blood, and hair, and water, and bread, and wheat, and every species of substance. This view, however, has been recently challenged. Anaxagoras, it is held, had in mind simply the old tables of opposites, such as hot and cold, light and dark, with which the Milesians, the Pythagoreans, and Heracleitus have already familiarized us. These are the primary qualities or stuffs, as it were, which are so interfused that no particle of the World-Stuff can be found which does not contain them all. Other kinds of things, such as the four elements of Empedocles, or hair, or flesh and blood, must rather be regarded as secondary combinations which owe their different natures to different proportions and arrangements of the primary molecules.[73]

Anaxagoras had now reached the point where the kaleidoscopic change and complexity of the phenomenal world could be reconciled with the Eleatic indestructibility and the invariable quantity and character of the World-Stuff. Like Empedocles, he had pulverized Reality into many particles which, though indestructible and unalterable in nature, possessed different characteristics and could shift their positions in space. And like him he had seen that creation and destruction and transformation need not imply absolute coming into or passing out of being, but could be explained as a mere mixture and separation of uncreated, indestructible, and unchangeable elements. Moreover, he had improved upon the crudeness of the Empedoclean theory by expanding the sum of primary differ-

[72] Aet. Plac., I, 3 (Diels, *Doxographi græci*, 279).

[73] For a discussion of this point, *cf.* Burnet, *Early Greek Philosophy*, 3rd ed., pp. 262-5.

ences and elements from four to an indefinite number, and had thus provided a broader and more subtle ground for the extent and *nuances* of the variety perceived by the senses.

At this point also, he found himself faced with the problem which confronted Empedocles in the same circumstances. Mixture and separation imply motion. But where does motion come from? In answering this question he again followed Empedocles' lead. He isolated and located in a particular element the energetic, self-moving, aspect of the Universe, which the Milesians had taken for granted, along with consciousness, matter, space, and the rest, as one of the universal undifferentiated characteristics of the World-Stuff. This dynamic substance was inherently active and had the power of setting in motion the other kinds of molecules, which, if left to themselves, would be inert. But whereas Empedocles had posited two such stuffs, Love and Strife, Anaxagoras reduced the number to one. And when he sought to identify this stuff with some one of the qualities or elements with which we are acquainted he found its alter-ego or "twin-soul" not in a physiological instinct or mystical emotion, but in the thinking and reasoning activity of life and consciousness.[74] The stuff which possessed the power of moving other things was perhaps most naturally the stuff which possessed the power of knowing them. At any rate, Anaxagoras located his active element in Mind.

Mind, however, in spite of the suggestions the name has for us, was quite as material as Love or Strife or as the Fire of Heracleitus or the World-Stuffs of the Milesians. We should be almost justified, indeed, in using the term "Brains" as a serious translation, since it is the only word in English that mixes up mind and matter in a single stuff in just the Anaxagorean manner. The one feature which distinguished Mind or "Brains" from other substances lay in the fact that its particles were "straight gray matter," so to speak, exempt from the alloy of all other qualities to which common elements were subject. A molecule of Mind contained nothing but Mind. It had no trace of hot or cold, or black or white, or hair or blood or wheat about it. It "is mixed with nothing but is alone, itself

[74] *Cf.* Cornford, *From Religion to Philosophy*, p. 154.

by itself." [75] And in comparison with other kinds of particles it was aristocratically fine and thin. Its exclusive nature, however, did not condemn it to dwell altogether apart. Being unadulterable it was privileged to appear in the mixed and gay society of some of the other elements, without sullying its purity or incurring even so much as a *noblesse oblige* reputation for return entertainment. "In everything there is a portion of everything except Mind, and there are some things in which there is Mind also." [76] The more favored few which contain Mind in addition to the general intermixture were, as we shall presently see, perhaps animate beings as compared with inanimate things.

But we should be on our guard not merely against imputing to Anaxagoras a belief in an immaterial Consciousness or Reason. Mind, he tells us, "has power over all things, both greater and smaller, that have life . . . and set in order all things that were to be, and all things that were and are not now and that are, and this revolution in which now revolve the stars and the sun and the moon. . . ." [77] Such a statement inevitably suggests to us the Hebraic idea of the spirit of God moving on the face of the waters, and of a divine intelligence creating and controlling the world. We should be careful, however, not to read any such idea into Anaxagoras' thought. The action of Mind in setting the other stuffs in motion seemed to him as unpremeditated and mechanical as the commotion caused in a tumbler of water by the ingredients of a Seidlitz powder seems to us. And the formation of the world due to the spread of the initial commotion was not in any way planned or directed by the cosmic brain-matter. It was a wholly purposeless and blind process, like the series of changes started and sustained among chemical elements by the mere presence of a catalyzer. Both Plato and Aristotle, who believed that purpose was the main factor in the formation and ordering of the world, were severe with him for using Mind as a mere mechanical cause which did

[75] Fr. 12, Burnet, *Early Greek Philosophy*, 3rd ed., p. 259.

[76] Fr. 11 (Mr. Burnet, however, transliterates "Nous" instead of translating it as "Mind").

[77] Fr. 12, Burnet, *op. cit.*

no more than wind the world up and then left it to run by its own mechanism.[78] And Plato doubtless was thinking of him as well as of Empedocles when he spoke of those philosophers who taught that the Universe was formed "not by the action of mind . . . or of any God, or from art, but . . . by chance and nature only."[79] We have then no more right to attribute to him a "teleological" or "design" theory of the activity of Mind than we had to ascribe to him an immaterial view of its character.

Anaxagoras' hypothesis regarding the World-Stuff was now complete. He had found the energetic, dynamic substance to give his inert, unchangeable particles of many kinds the necessary shove and set them going. It remained to fill in the outlines with a description of the formation of the world. This, he tells us, was effected as follows;—In the beginning there was so complete a fusion of all the different particles that no one kind could be distinguished from another. Air and ether, however, which are infinite, predominated in the mixture (here he seems to be thinking of Anaximenes). Mind set a portion of this mass whirling with unparalleled rapidity, and the spinning motion spread little by little and involved larger areas. The speed generated force, and particles of different sorts were separated out from the indiscriminate mixture and brought together with molecules of their own kind. "The dense and the moist and the cold and the dark came together where the earth is now, while the rare and the warm and the dry (and the bright) went out toward the further part of the æther."[80] From the qualities or elements which spin nearest to the center, "as they are separated off, earth is solidified; for from mists water is separated off and from water, earth."

The spinning of the central mass caused the stones to "rush outwards more than water,"[81] and great fragments of rock were flung off and caught up into heaven where they continue to fly round and round the earth. They were set on fire by the

[78] Plato, *Phœdo*, 97b. Aristotle, *Metaphysics*, I, 4. 985*a*.
[79] Laws X, 889b.
[80] Fr. 15, Burnet, *Early Greek Philosophy*, 3rd ed., p. 260.
[81] Fr. 16, *loc. cit.*

rotation of the æther, and became the stars, the sun, and the planets. There were also other fragments flung off which were not ignited and are therefore unseen in their revolution.

As to Anaxagoras' exact ideas about the moon we are not so clear. Commentators variously describe him as saying that it, like the sun, is incandescent [82]; that it is a mixture of dark and fiery stuff, the result of which is its shadowy appearance [83]; and that it has no light of its own but reflects the light of the sun.[84] The earth, as in the system of Anaximenes, is conceived as flat and floating upon a cushion of air.

We are also somewhat in the dark as to his ideas regarding the development of life upon the earth. Apparently the distinction between the animate and the inanimate was bound up in his opinion with the appearance of Mind as an ingredient in the composite natures of some of the elements, but not of others.[85] Though Mind is everywhere the same in quality and degree, the amount of it present in the different kinds of molecules into whose composition it enters, or in the secondary combination of these particles, may differ. It is to this difference of quantity and to differences of physical structure that higher and lower forms of life and degrees of intelligence are due. The mind of man, for example, is of the same quality and kind as the mind of a plant—only there is more of it.[86] This doctrine of the qualitative sameness of all life and intelligence, it will be noticed, anticipates the point brought home by the doctrine of evolution, that human consciousness, like the human body, has been slowly developed out of less conscious forms of existence.

Anaxagoras also seems to have had some sort of theory of physical evolution, though we lack a detailed account such as we find in Anaximander and Empedocles. He taught, we are told, that the air contained the seeds of both vegetable and animal life which the falling rain brought down to earth; and also that "animals arose in the first place from moisture and

82 Hippolytus, I, 8 (Diels, *Dox.* 562). Burnet, *op. cit.*, p. 271.
83 Aet. Plac., II, 30 (*Dox.* 36).
84 Hippolytus, *Phil.* I, 8 (*Dox.* 562).
85 Burnet, *op. cit.*, p. 272.
86 *Cf.* Fr. 12 end. Burnet, *op. cit.*, p. 260.

afterwards one from another." [87] The superior intelligence of man he laid to the possession and use of hands,[88] which gave a greater scope to the exercise of mind. This association of intelligence and hands may perhaps remind us of the modern discovery that the speech center in the brain is always in the hemisphere which controls the dominant hand—in the left hemisphere in the case of right-handed people and vice versa.

Whether or no he believed in a succession of world cycles separated by periods of chaotic confusion and complete intermixture of the world-particles with one another, is a doubtful question, probably to be answered in the negative.[89] Whether he believed, as Anaximander and Anaximenes seem to have done, in the simultaneous existence of innumerable worlds similar to our own is a matter of dispute. A passage from his writings is preserved which at its face value appears to refer to the inhabitants, both animal and human, the cities, and the cultivated fields, the sun and the moon, and all the rest of the furniture of other systems like our own produced elsewhere by the spread of the spinning movement and the ensuing separation of particles.[90] But although the seeming implication of a plurality of worlds has been vigorously defended,[91] it is only fair to say that it has also been vigorously attacked, and that the passage has been held to refer merely to conditions prevailing, in Anaxagoras' opinion, upon our own moon.[92]

The growth of a specialized psychological interest, which we have noted from time to time, made a further advance in Anaxagoras' philosophy. His theory of sensation was more detailed than that of Empedocles, with whom it seems as if he were carrying on a controversy. To the latter's view that perception was essentially of like by like he opposed the hypothesis that sensation was produced by the stimulation of one opposite by another. Like, he pointed out, could not be affected by like;

[87] Hippolytus, *Phil.* 8 (Diels, *Doxographi græci,* 563). Trans. Fairbanks, *Handbook of Greek Religion,* p. 261.

[88] Aristotle, *Part. Anim.,* IV, 10, 687*a*, 7.

[89] Zeller, *Pre-Socratic Philosophy,* II, p. 358.

[90] Fr. 4, Burnet, *Early Greek Philosophy,* 3rd ed., p. 258.

[91] Burnet, *op. cit.,* pp. 269-270.

[92] Zeller, *op. cit.,* II, p. 359, note 3.

witness the insensibility of the black pupil of the eye to darkness and the indifference of the body to temperatures similar to its own. The dark depths of the eye were sensitive to light, cold was known by the warm in us, warm by the cold, sweet by the sour, fresh by the salt. The same was true of smell and hearing which were due, the one to contact through respiration, the other to the percussion of the air upon the skull, and the consequent reverberation in the brain. Keenness of perception, he thought, was in proportion to the size of the sense organ.

Pain was caused by the contact of opposites, and therefore to some degree accompanied all sensation. It eventually became perceptible when a stimulus was excessive or had been too long continued, as was shown by the disagreeable character of too bright light or loud noises, and the weariness which resulted from prolonged attention to the same thing.[93]

That the senses do not acquaint us with Reality exactly as it is, Anaxagoras also explicitly recognized. They are too weak to perceive the complexity of qualities and elements which is present in every particle of the World-Stuff. For example, if we take two colors like black and white and mix them, the eye no longer perceives molecules of white lying beside molecules of black, but only particles of uniform gray. Similarly, we do not perceive the blackness lurking in the seemingly pure white of snow, or the minute amount of sweetness and of other primary qualities which in reality is mixed with every particle of sour.

This admission of the untrustworthiness of the senses, however, does not warrant us in considering Anaxagoras either a skeptic or a rationalist. The senses, he thought, do not take us the whole way to the truth, to be sure, but they do not mislead us. Their presentations acquaint us grossly, and with the finer detail blurred, with things as they really are, "What appears is a vision of the unseen." [94] Reason supplements them by carrying the process of dissection of phenomena to a point

[93] *Cf. Theophr., De sens.*, 27 (*Dox.* 507). (Fairbanks *Handbook of Greek Religion*, p. 258.)

[94] Fr. 21*a*. Burnet, *Early Greek Philosophy*, 3rd ed., p. 261.

where perception fails, but beyond which imagination continues, to follow it. The mind's eye can still see all the colors in the rainbow-like nature of particles too small for even their dominant tint to strike the physical vision. But Reason, in his view, does not descry a new world of immaterial or "supersensible" realities. It is merely a sort of microscope held to the naked eye of perception, which discovers nothing that the senses might not detect if only they were sharpened.

We may now pause for a moment to sum up our impressions of Anaxagoras. We find him pushing on some distance beyond Empedocles towards the atomistic and mechanical view of Reality finally attained by Leucippus and Democritus. The four passive constituent elements of the Empedoclean World-Stuff are expanded by him into an indefinite number of particles, each one of which shimmers with all the basic qualities, but is predominantly and distinctly colored with that which gives it its name. Each unit of iron, for example, contains also gold, and water, and the like, but we call it iron because there is much more iron in it than there is of any other nature. The particles of Mind, alone, are absolutely pure and unadulterated, and Mind also is the only element which is inherently active and self-moving. Thus the two active elements of Empedocles were reduced to one, and their semi-mythological natures were supplanted by a more scientific and a declaredly material principle.

It is to the initial impulse given by this "Mind-Stuff" that the formation of the Universe is due. In the beginning all the particles of the various elements lay mixed in a chaotic confusion. Then Mind entered into the mixture and set the other particles spinning. This spinning spread throughout the Universe and in a perfectly mechanical manner brought about a separation of the different elements from one another; and gradually built up the world. The sun and the moon and the stars, instead of being divine are merely great pieces of fiery rock, shot off from the original central mass by the whirling motion and set on fire by the rotation of the ether. The remnant of the mass became the earth, which is conceived

as flat and as floating on a cushion of air. It is an open question whether he thought that innumerable worlds of this sort were evolved.

Of Anaxagoras' theory of the origin and growth of life we know only that he thought that the first animals arose from moisture, and then from one another, and that he associated the development of the human intelligence with that of the hand. Of his psychology, however, we are more fully informed. His views on sensation are as famous as those of Empedocles, though diametrically opposed to them. Instead of believing that like was perceived by like, he argued that sensation was caused by the contact and interaction of the qualities in the human body with their opposites in the external world. The inability of the senses to reach Reality was explicitly recognized by Anaxagoras, and some attempt was made to explain it. But he feels that the deficiencies of the senses are compensated by the power of Reason to carry on the process of analysis beyond the point at which perception fails, and to attain a vision of the ultimate constituents and structure of things.

During his last years, Anaxagoras gathered disciples at Lampsacus, and founded a school of philosophy which continued to exist after his death. Apparently, however, his teachings were quickly modified by his followers and tended to revert to the older Milesian doctrine. Archelaus, his successor and the only member of the school whose name and views are specifically known to us, held that the original mixture of all elements and qualities was Air, and that Mind instead of being a pure, unalloyed stuff contained an admixture of foreign particles like the other elements, and like them was suffused throughout the molecules of the airy World-Substance. The Universe arose from the condensation and rarefaction of the World-Stuff, and from the interaction of the two resultant principles of fire and water. All forms of life, including man, also appeared as a consequence of the intermingling of the warm and the cold, and were nourished by the primeval slime. They lived but a short time, and then a process of

generation from one another and of evolution began, in the course of which men were distinguished from the rest.[95]

The same tendency to make philosophy grow backwards and to check the more advanced systems by combining them with more primitive views is noticeable in Diogenes of Apollonia in Crete, whom we mentioned in discussing the Milesian School. He seems to have been a somewhat younger contemporary of Anaxagoras, and like him to have started his philosophic career under the teachers of a Milesian, and particularly an Anaximenean way of thinking. Like Anaxagoras, too, he came to Athens, was made fun of by the comic poets, incurred, because of his opinion, the hostility of the intolerant crowd, and for a time was in danger of his life.

Diogenes held to the Milesian view that the World-Stuff must be one, and argued from the universal and versatile nature of Air that this must be the substance of which all things were made. Rarefaction and condensation he thought lay at the bottom of the process by which the Universe was formed. This combination of the views of Anaximenes and Anaximander he enriched, like Archelaus, with suggestions from Anaxagoras. Air was suffused with Mind which accounts for the life and consciousness, the systematic disposition of the World-Stuff, and the order in the world. Condensation and rarefaction gave rise to many transformations and differentiations "and an infinite number of colors and savors."[96] There was a whirling motion natural to the animate and intelligent character of Air, by which the world was formed, with the earth, probably shaped either like a disc or a cylinder, at the center and the heavenly bodies revolving about it. Innumerable worlds besides our own were created in this way.

Animals arose from the earth. The principle of life and intelligence—warm air—was the same in them all but it did not exist in any two in the same manner. The differentiation of species was incidental to the general process of differentiation going on in the Universe. Like Empedocles, Diogenes was keenly interested in medicine. The principle of life, he

[95] Burnet, *Early Greek Philosophy,* 3rd ed., pp. 359-360.
[96] Fr. 5, Burnet, *Early Greek Philosophy,* 3rd ed., p. 354.

thought, was carried with the blood in the veins and was diffused throughout the whole body, but sensation was located particularly in the brain and was due to the action of the external upon the internal Air.

While dealing with these revivals or persistences of Milesian doctrine we should also perhaps mention Hippo, probably of Samos, who reverted to Thales' teaching that the World-Stuff was Water; and Idæus of Himera who maintained that the World-Substance was Air.[97]

### III

We now pass on to two men, Leucippus and Democritus, whose teachings not only seem like a fulfilment of the prophecies and a solution of the problems which we have so far considered, but also constitute one of the final and most imposing philosophic systems of all time. The atomic and mechanical theory which they first formulated inspired the beginnings, and with no essential changes still guides the development, of modern scientific hypothesis. It persists even in doctrines as revolutionary as those lately propounded by Einstein, and its familiar features may be detected behind the intricate and novel disguise of "point-events" separated in "space-time" by "interval-relations" and following, if undisturbed, "geodesics" or tracks of maximum length in a space in which all straight lines are really curved. The most important of the laws of external nature, if not the only law, we are told by an exponent of this ultra-modern physics, "is the law of atomicity." [98]

Of the two founders of this law, Leucippus is a shadowy figure. His fame and teaching, like the rays of the lesser sun in a double star, have been eclipsed and absorbed by the clearer and brighter light of his pupil Democritus, through which their faint lines have been transmitted to us. He was born, according to a varying tradition, at Abdera, at Elea, at Melos, and, perhaps more probably, at Miletus. The date of his birth is

[97] *Op. cit.*, pp. 351-2. *Cf.* Zeller, *Pre-Socratic Philosophy*, I, pp. 280 *et seq.*

[98] Eddington, *Space, Time, and Gravitation*, p. 199.

not known, but apparently he was a contemporary of Empedocles and Anaxagoras. He is reputed to have been a disciple of Parmenides, and even of Zeno, and it is not unlikely in any case that he should have been acquainted with the views of his neighbor, the Samian admiral and Eleatic philosopher, Melissus.[99] Like Empedocles, then, he must have first imbibed Eleatic doctrine, and later have rejected it in favor of the strong meat of his own ideas. Whether or not he committed his views to writing is not recorded. Our knowledge of him is wholly derived from the comments of ancient writers, by whom his name is always mentioned in conjunction with that of Democritus. Although, then, master and pupil seem to have differed in some minor points, such as the causes of thunder, we may nevertheless treat the Atomic Theory for our purposes as if its light originated in a single and not a binary star.

Of Democritus' life an authentic though scanty biography can be compiled. His own statement that he was forty years younger than Anaxagoras would place his birth about 400 B. C.; and this date, or one slightly later, has been accepted as substantially correct. His native city was Abdera in Thrace, which was settled, as we have seen, by Ionian refugees from Teos about the same time that the inhabitants of Phocæa, fleeing from the Persians, sailed away to Sicily, and thence to Southern Italy, and founded Elea. All sorts of stories are told about his boyhood to illustrate his propensity for philosophy, and the Pythagoreans, Parmenides and Zeno, Anaxagoras, and even the Persian Magi, have all been credited with an important part in his education. But the most direct, personal, and overpowering influence on his views was that of his teacher Leucippus.

With the incidents of his life and death gossip has been busy. Possessed of a rich father, and later, by inheritance, of a great fortune, he was in a position to indulge not only the curiosity natural to every young man to make the *grand tour* and see the world, but also his own particular hobby of gathering in and storing up wisdom. Ancient tradition had

[99] *Cf.* Burnet, *Early Greek Philosophy,* 3rd ed., pp. 331 *et seq.*

it that he not only spent five years in Egypt studying with the priests but also traveled in Persia, Chaldæa, and even India and Ethiopia, and returned well versed in magic and prophecy. He himself is quoted as boasting that he had journeyed more widely than any other Greek, and that he was a better mathematician than were the Egyptian priests. But these reports are not now regarded as authentic, and the extent of his travels is not certainly known. There is even some doubt whether he ever visited Athens. In any case he passed a considerable portion of his life in Abdera, teaching and building up a school of disciples. There are also stories extant that he spent so much money seeing the world that he was forced on his return to take to teaching in order to make a living. Another version represents him as neglecting his property like Thales and Anaxagoras, and as silencing the critics of his unbusiness-like ways by recouping through speculation in oil-presses. Still another tale credits him with having handed over his property to the State in order that the care of it might not distract him from his philosophic and scientific studies.[100]

The latter, to judge from the accounts of his writings, must have been sufficiently preoccupying. An ancient historian rates his literary fecundity next to that of Aristotle,[101] and elsewhere gives an imposing catalogue of his books on physics, astronomy, biology, psychology, ethics, mathematics, and grammar, not to speak of treatises on agriculture, painting, tactics, law, coughing, fever, and the like.[102] Many of the works and fragments attributed to him are, however, regarded as spurious.

Gossip also prolonged his life to the term of one hundred and nine years, and even then could not let him die in peace. When on the point of dissolution he is said to have lasted out an extra three days by sniffing the steam from hot bread,[103] or, as another story has it, by eating honey,[104] in order that his pre-

100 For a compilation and sifting of the evidence relating to the life of Democritus, *cf.* Zeller, *Pre-Socratic Philosophy*, I, p. 208, note 1.

101 Diogenes Laertius, I, 16.

102 *Ibid.*, IX, 49.

103 *Ibid.*, IX, 43.

104 Athenæus, II, 416.

mature death might not prevent the ladies of his household from taking part in the festival of the Thesmophoria. But it is also said that he starved himself to death,[105] that he was killed by lice,[106] and that, wearied with old age, he committed suicide.[107] All in all, the manner of his death was as varied as that of Empedocles. Its date is not known.

Through all this confusion of fact and fancy, however. Democritus stands out as one of the greatest thinkers of all ages. In Græco-Roman times he enjoyed a reputation scarcely second to that of Plato and Aristotle, not only because of his immense and omnivorous learning and his philosophical genius, but also by reason of his mastery of a literary style comparable, in ancient opinion, with that of the Platonic dialogues. Modern criticism, though it has discredited the authenticity of most of the laudatory gossip and diminished the number of the fragments of his works which can be considered genuine, concurs in the general judgment passed upon him by antiquity. It has been said of him that his like is scarcely seen once in a hundred years;[108] that he surpassed "all his predecessors and contemporaries in wealth and knowledge, and most of them in acuteness and consecutiveness of thought";[109] that his ethics may be ranked with the teaching of Socrates;[110] and that the loss of his writings is the "most lamentable that has happened to the original documents of ancient philosophy."[111]

Leucippus, like Empedocles, as we have seen, began his philosophic career under Parmenides' influence, and later revolted from Eleatic teaching. The extent and limitations of his apostasy were also outlined by the system of his Sicilian contemporary. He admitted the force of the argument that Reality cannot come into or pass out of being, and that therefore there can be no real creation or real destruction of World-

[105] Lucian, *Macrobius,* 18.
[106] Marcus Aurelius, III, 3.
[107] Lucretius, III, 1, 1037 *seq.*
[108] Mullach, *Frag. Phil. Græc.* (ed. 1869), p. 338.
[109] Zeller, *Pre-Socratic Philosophy,* II, p. 214 (continuation of note 1, p. 207).
[110] Windelband, *Hist. Anc. Phil.* (Eng. trans. 1899), p. 172; *cf.* Burnet, *Greek Philosophy, Thales to Plato,* p. 201.
[111] Windelband, *op. cit.,* p. 158.

Stuff or any real alteration in its nature. At the same time he shared the feeling that the change, motion, and variety which we see about us cannot be dismissed as false opinion and illusion, pure and simple, but must be explained and reconciled with the Parmenidean views.

Empedocles had solved the difficulty by quartering the solid sphere of Parmenidean Being into the four elements, and then grinding the latter up into particles, free, when driven by Love and Strife, to mix and separate in various proportions and arrangements. Anaxagoras had pushed this method a step further. He had expanded the four elements of Empedocles into an indefinite number of kinds, and had reduced the two dynamic agents to a single stuff which by purely mechanical means set all the other elements whirling. Leucippus now took the final step, which curiously enough in some respects was a step backwards towards Parmenides. He also shattered the Eleatic Sphere to bits, each of which is uncreated, unchangeable, and indestructible. But he did not further follow the example of Empedocles and Anaxagoras by drawing upon the sensible world for material with which to color the broken pieces. He neither divided the fragments into four parts and painted them with the crude elemental colors of fire, air, earth, and water, nor delicately tinted each separate bit with a rainbow mixture of every sort of basic perceptual quality. He rather let them be in all their old Eleatic simplicity and transparency, like fragments, we might almost say, of a broken globe of flawless glass. But just as such bits, although equally colorless, would still differ in size and shape, so in Leucippus' opinion, the Atoms of which the World-Stuff is composed were of different forms and magnitudes, though absolutely alike and homogeneous in all other respects. Again, we can imagine ourselves fitting the pieces of transparent glass together into masses aglow with prismatic lights, or see how drops of the clearest and purest water combine to produce an effect of flat dense color, like the whiteness of snow, or the dead black of a frozen lake, or the deep blue of the summer sea. In like manner, Leucippus felt, simple differences of size and shape, and ever-shifting geometrical arrangements

and combinations might account for the bewildering kaleidoscope of the sensible world with its endless variety, and its ceaseless birth, death, and interchange of qualities and elements and things.

With Leucippus, then, we reach one of fundamental presuppositions of modern science;—that all qualitative difference and change can be expressed and understood in purely quantitative and geometrical terms. Physics, to be sure, has abandoned his Atoms for vortices and strains in the ether, for concentric spheres of ions and electrons, and latterly for "point-events." But the principle he laid down remains unchanged.

We may remember that at this point both Empedocles and Anaxagoras were forced to explain the origin of the motion which by separating and mixing the particles of World-Stuff is an indispensable agent in the formation of the Universe. Leucippus is confronted with the same question. His answer, like his solution of the problem of the World-Substance, is a step both in advance of his contemporaries and backwards to more primitive systems. He rejects the view that the dynamic, active aspect of the world can be traced to and isolated in one or two substances, and that the other elements or particles are, if left to themselves, naturally without motion and inert. Like the Milesians and Heracleitus, he thinks that movement and activity are general characteristics of all things, suffused throughout the entire World-Stuff. The Atoms need no outside agent like mind to give them the initial shove which sets them going, or like Love and Strife to keep whipping them into continued activity. They are themselves naturally in motion. The fact, we might say, of their motion and activity, is just as fundamental as the fact of their existence. There they are, and there they move—from all eternity. Had we persisted in asking Leucippus a reason for their movement, he would doubtless have retorted by asking us upon what grounds we considered them naturally inert, and for a reason why they should *not* move. Here, again, Leucippus lays down another presupposition of modern science. Physics can no more get behind the existence of motion than it can that of

matter. Movement, activity, occurrence, "point-events," are simply there. To ask why they are there is tantamount to asking why Being exists.

The contribution, however, for which Leucippus is most famous is his clear and explicit distinction between the World-Stuff and empty space. Parmenides, it will be remembered, had denied the possibility of the existence of a void or vacuum, on the ground that the absolutely empty is mere nothingness and that it is a contradiction in terms to say that nothing exists. Space, then, is packed full of stuff. But if it is packed full of stuff, there is no room for movement. Hence motion does not exist, and the appearance of it is false opinion and illusion. Empedocles and Anaxagoras had dodged the issue. Apparently they accepted the doctrine that empty space cannot exist, but assumed that movement can take place without it. But they never raised or discussed the point, or justified their own position.

Leucippus, however, meets the point squarely. Motion, he feels, is impossible without empty space. "What is" can only move in "what is not," and can be no more real than that in which it lives and moves and has its being. Or, to put it the other way round, the empty space which is the fundamental condition of the liveliness and movement inherent in the Atoms must be no less real than they. In a word, Reality is Atoms moving in sheer emptiness.

This sharp distinction between the World-Substance and the space through which its particles move suggests closer definition of the Atoms. If they are absolutely simple and homogeneous, like the Eleatic Sphere, they cannot contain any empty space within themselves; for in that case they will not be pure stuff, but a spongy mixture of space and body. But, as Melissus had pointed out in criticizing Anaximenes' theory of condensation and rarefaction, where there is no empty space there must needs be entire fullness or compactness. Hence each Atom must be completely stuffed with substance, or internally solid and "full up." Again, an Atom cannot be divided, for in the first place the process of division could only be effected by thrusting empty space into it and thus destroying

the homogeneous character of its insides, and secondly, division if carried to the limit would, as Zeno had argued, finally crumble it into mathematical points without solidity or even extension. The particles of World-Stuff, then, may be contrasted with space in terms used by Melissus and perhaps borrowed from him by Leucippus. They are absolutely full, a "plenum," whereas space is an absolute vacuum or void.

So far Leucippus in his own right and name. How much further he may have gone in the elaboration of his doctrine we cannot ascertain, for his footprints at this juncture become confused and lost in the deeper and clearer impress left by Democritus. The Atoms, we now explicitly learn, differ from one another with respect to size, shape, order, and position. The diversity of their shapes must be boundless, since only on such a hypothesis can we explain the infinite complexity and variety of the sensible objects composed of them. Moreover, no reason can be found in any case for limiting the Atoms to one set of forms rather than another. On the part played by differences of size, position, and arrangement Democritus does not lay so much stress. Finally, the Atoms have weight, and are heavier or lighter in direct proportion to their size.

By clustering together the Atoms form the things of everyday life. The generation and decay, growth and change, which we see perpetually going on in the world about us, are in reality nothing but the coming together and the breaking apart of such clusters, and the increase in number, the substitution, and the shifting of the particles which compose them.

Because of their different sizes and shapes, the Atoms in coming together do not completely dovetail with one another, but leave cracks and chinks of emptiness between them. Seemingly solid objects, then, are like picture puzzles joggled out of true, though our senses are not keen enough to detect the vacant spaces between the pieces. But the differences of density, hardness, and weight, which we do perceive in things, is conditioned by the nature and number of these chinks and crevices. A large body may be in reality much more spongy and, to put it paradoxically, more full of emptiness than a smaller one, and may therefore weigh less. Again, the empty

spaces may be scattered about in various ways. All the void in a thing may be collected in one or more large holes leaving what stuff there is densely packed, and the object in question comparatively hard; or a less amount of emptiness may make so many little cavities everywhere that though the amount of stuff, and therefore the weight and density, of the substance are greater, the hardness and rigidity are much less. Gold, for example, is one of the heaviest but at the same time one of the softest and most pliable of metals.

The weight, density, and hardness of an object, then, depend upon the arrangement of its Atoms in the Void, and upon nothing else.

The possession of such other properties as color, temperature, taste, smell, and the like, requires, as we shall presently see, a more complicated explanation. But for the moment let us watch with Democritus the building of a world.

Leucippus had already taught that the Atoms require no external agent like Mind, or Love and Strife, to set them going, but are themselves naturally in motion. To this Democritus adds that, as the Atoms have weight, they naturally fall straight down through the Void. Since the Void is infinite and therefore bottomless, to this downward plunge there is no end in space or time. Democritus was wrong, as we now know, in assuming an absolute up and down, but before blaming him we should remember how hard it is for us, in spite of our closer acquaintance with the law of gravitation, not to think of the inhabitants of the Antipodes as walking about head downwards like flies on a ceiling.

In his next step, also, he makes another slip with which we can sympathize. He supposes, as most of us would do except for direct scientific assurances to the contrary, that a heavier must fall faster than a lighter body. Therefore, in his opinion, the larger Atoms are continually overtaking the smaller and running into them from behind. The rear-end and glancing collisions which ensue cause a recoil, and the lighter Atoms naturally bounce higher and tend to be forced upwards.

To these simple primary movements of impact and recoil all the intricate motion and activity of the World-Process

are due. Since the Atoms are indestructible and unalterable no change of any sort can occur in their shape, size, weight, or internal nature, either spontaneously or from their collisions with one another. Nor can their movements be influenced from a distance or actuated by the hidden link of some mysterious "sympathy" existing between different parts of the Universe. They can act upon one another only externally by the immediate contact of blows or pressure; and all they can effect by this direct and external action is to stop or alter one another's previous motions.

But the sequence of movements derived mechanically from the original downward falling of the Atoms and the bouncing which results from the overtaking of the lighter by the heavier, suffice in Democritus' opinion to account for the evolution of the Universe. The interaction of the two motions, in some way of which no description has come down to us, sets up a whirling movement which spreads throughout the downpour and twists the rain into innumerable atomic waterspouts. These vortices tend to sift out particles of similar form and weight from the general mass, and bring them together. But the confusion is too great to permit of orderly and complete expansion.

Atoms of different shapes and sizes impede, jostle, and press one another, and in the long run get hooked and lumped together in all sorts of ways. In many cases, even, things are turned topsy-turvy and the heavier particles remain above and are supported by the lighter. The spots where the hail thickens and the Atoms pile up and bunch and rain down in solid masses are the world-systems, which preserve for a moment their distinct character and their structure, and then dissolve and vanish once more into the stupendous universal downpour of infinite substance through infinite space. Since the storm-area is as endless as the Void itself, and there is no place whatsoever where the Atoms are not falling, the variety like the number of universes formed will be unlimited, although similar systems—others like our own for instance—may also happen to occur. Apparently then, Democritus holds to the doctrine of innumerable worlds in both the senses which we have already discussed in connection with Anaximenes, Anaxi-

mander, Heracleitus, Empedocles and Anaxagoras. An endless number of universes are everywhere and forever being created and destroyed.

The simplicity of the process by which the world-systems ceaselessly shape, maintain, and dissipate themselves in the storm of hailing Atoms is nowhere complicated or thrown out of gear by the interference of chance, purpose, design, or the whim or will of the Gods. "Nothing," says Democritus, "happens at random, but everything occurs according to law and is determined by necessity." [112] In these few words we have summed up in a nutshell the mechanical view of the world which is the basis of modern science. The Atoms fall, and the heavier overtake the lighter, by an internal necessity of their own natures. Their recoil takes place according to what we should to-day call the mechanical laws of the equality of action and reaction and of the angles of incidence and reflection. Their resultant whirling motion is a purely mechanical effect. Similarly, their consequent combinations and accumulations in world-systems, and the successive clusterings and shiftings which build up the internal structure of the Universe follow upon one another with the inevitableness and the precision of clock-work. Given the laws of motion, as Democritus understood them, and every fresh arrangement and transposition is absolutely determined by, and calculable from, the situation which preceded it, and as completely determines the combinations and movements which follow. In short, the innumerable worlds with all their suns and stars, their continents and seas, —dead, it may be and barren as the moon, or vivid and pulsing with all the life of the green earth—are machine-made products pure and simple. They are ceaselessly turned out, finished to the minutest detail, scrapped again to Atoms, and remanufactured, by the tireless running of an infinite automatic factory, which draws the entire motive power for its endless output from its own fall, and falls by its own weight through all eternity.

No wonder, then, that among those whom Aristotle damned

112 Fr. 41 (Mullach, *Frag. Phil. Græc.* Ed. 1849, p. 365).

for neglecting or rejecting purpose and design in explaining the Universe, Democritus

> ". . . . exalted sat, by merit raised
> To that bad eminence. . . ."

But Aristotle's censure, like Milton's description of Satan in "Paradise Lost," has only helped make a hero of an intended villain. For Democritus' analysis of all the differences and changes of quality in sensible objects into simple differences of quantity and changes of place in their constituent parts, is completed, and the development of the atomic theory is given its fundamental and finishing touch, by his doctrine that every change of place is absolutely determined by a law of mechanical cause and effect. These two strokes of his genius reduce to computable terms the otherwise incalculable complexity of the nature and behavior of the everyday world, and clear the way for the great scientific assumption that the World-Stuff can be measured with mathematical precision, and the movements of the World-Process calculated with mathematical certainty. To Democritus, then, we owe the beginnings of the faith in the uniformity and trustworthiness of Nature, which has opened before our eyes the vision of exact, and the vistas of applied, science, and has given us the confidence that "he who hopeth for an hour, may hope for eternity," and may plan largely and build solidly for future generations in that hope.

The ideas which he formulated were not, however, destined to establish themselves immediately. Aristotle set a contrary fashion of explaining events not by their antecedents but by their consequences interpreted as their purposes, which endured for some eighteen centuries. Democritus' teaching, too, was modified and perverted by the Epicureans and in its original form was lost to mediæval second-hand knowledge of the Greek classics. It is a curious irony of the history of philosophy that when Dante, some sixteen hundred years later, found him in the upper circle of Hell, suspended in Limbo along with the other great spirits of antiquity, all that the great poet of the Middle Ages could say of the founder of the mechanical theory was that he "ascribed the world to chance."

But the Renaissance was at hand, and was to burst the gates of Limbo asunder and draw forth the ancient to quicken and enlighten a new world. And in the widespread dawn of the new era, the great double star of Leucippus and Democritus, so long eclipsed by the Aristotelian explanation of things by their purposes, was to rise again as the morning star of modern scientific progress.

Democritus' clear perception of the fundamental principles of science availed him little so far as his views regarding the construction of our particular universe are concerned. These show no advance over contemporary theories, and tend to agree on the whole with the account given by Anaxagoras. The whirling motion of the clustering Atoms drove the heavier down towards the lighter, up and away from the center. The former were massed together into the solid earth, the latter provided the substance of air and fire and the heavens. Some of this lighter stuff lumped together in sticky, semiliquid masses as it rose, and these balls were dried and eventually ignited by the rotation of the air in whose currents they were carried. In this way the heavenly bodies were created. Meantime the earth rolled up like a snowball and became more and more densely packed. As it grew heavier, it wobbled less, till finally its weight settled and steadied it in the center of our system. Of its shape Democritus, like Anaxagoras, took the familiar Milesian view that it is a flat disc or cylinder supported by air. In the liberal atmosphere of Abdera he could also refer with impunity to the mountains on the moon.

Regarding the origin of life on our earth, Democritus was philosophically conventional and orthodox. He referred it to the primeval slime. We have, however, no record of his teaching concerning the method by which life was generated and its myriad forms evolved. There is, however, plenty of evidence that he was keenly interested in biology and physiology, and, in the case of man at least, was much struck by the completeness with which, in his opinion, living bodies were adapted to the performance of their activities.

This enthusiasm for the seeming design in the organs of animate beings, and the seeming purpose in their functions,

coupled with the absence of any explanation of them in mechanical terms, creates an impression of incompleteness and even inconsistency in his system. When, for example, he speaks of the ear as a receptacle for words waiting like an empty pail for the voice to be poured into it,[113] he seems almost to be picturing its Atoms as brought together, not by the laws of motion and blind necessity, but by some mysterious purpose of enabling the organism to hear. The suggestion is heightened by references to his having attributed the construction of the limbs and organs to the secret working of a hidden principle. The apparent failure to reduce to mechanical terms an aspect of the world which otherwise flatly contradicted his theory, has laid Democritus open to the charge of leaving the mechanical hypothesis unfinished and undefended at one of its most vital points.[114] For if the adaptation of organs to their functions and of organisms to their surroundings cannot be accounted for in the same way that all the other arrangements and movements of the Atoms are explained, the laws of mechanics are not universal and the infinite mechanism we have been picturing is not a true likeness of Reality.

Democritus' hesitancy and silence in this important matter are all the more puzzling in view of the lead given him by Empedocles. The latter, it will be remembered, had explained the evolution of the structure of living beings as a purely mechanical process in which the various limbs and organs were blindly thrown and lumped together by the turmoil of Love and Strife, and those combinations which happened to be suited to their environment were preserved and crystallized into the existent species of plants and animals. Had this idea, which so strikingly anticipates the Darwinian theory of the struggle for life and the survival of the fittest, also attracted Democritus' attention, it should have dispelled any perplexities he might have felt about purposive activity. For it would have shown him that the ear, for example, no more existed for the purpose of hearing than the Atoms for the purpose of creating a world. It existed, as Empedocles might

[113] Zeller, *Pre-Socratic Philosophy*, II, 256. Note 2.
[114] Lange, *History of Materialism* (Eng. trans. 1877), I, p. 32.

have said, because a little bunch of Atoms, roughly hollowed out like a pail, collided and became entangled with the other clusters which we call the other organs of the human body. The atomic lump thus formed, luckier than many others which could not survive in the storm, held together and perpetuated itself intact amid the fracas of the evolving world. The ear, happening to be a part of the lump that was not knocked off or kneaded into some other limb or organ, preserved its pail-like shape and became a natural receptacle for such sounds as hit the body. The consequent ability to hear strengthened the position of the body in the atomic storm and contributed to the survival of the organism—particularly of such bodies as had the most capaciously and sensitively formed ears and heard best. The choicer ears perpetuated in this way increased again the durability of the organisms possessing them—and this virtuous circle of reciprocal complement continued indefinitely. Thus it is that the structure of the ear has developed and become suited to its function, and that we happen to hear.

In this Empedoclean manner and as a by-product of the same processes and the same machinery which compress the Atoms into an earth or make the stars go round, Democritus might have explained the entire structure of all living beings and its characteristic adaptation to function and environment. He should have said that design in the make-up of an animal, and the apparent determination of its activities by purpose, are not essentially different from any other quality or change in an object, and are entirely explicable as arrangements of Atoms determined simply by size, shape, weight, and previous movement and collision. But although Democritus seems to have been acquainted with Empedocles' poem he failed to avail himself of its mechanical explanation of the peculiarities of organic life, valuable as it would have been to him in completing his mechanical description of the Universe. Perhaps he had some explanation which has not been transmitted to us. Perhaps he did not realize the problem, or the inconsistency created in his system by allowing design and purpose to flourish unchallenged, and indeed overpraised, in the midst

of an otherwise severely mechanical Reality. Be that as it may, his system is unfinished—as if, for example, he had pulled a cuckoo-clock to pieces for our benefit, explained with great clearness the fundamental laws of gravitation and motion, and the complicated interaction of the weights and cogs which make the hands go round so punctually and invariably, and then passed by the periodic appearance of the cuckoo with a few enthusiastic remarks about the adaptation of its throat to its song, and the cleverness with which it opened the little doors for the purpose of popping out upon the balcony and sounding the hour.

If, however, Democritus leaves the behavior of living beings unreduced to mechanical terms, he gives a strictly atomic account of their animating principle. The soul is a combination of Atoms, although of extra-fine Atoms, perfectly round and smooth and polished, and very mobile. The soul-atoms he identifies in a quite Heracleitan manner with those composing fire. Their ceaseless quivering animates and moves the body. The quivering of enough of them is consciousness and thought. Though the various faculties are associated with different organs, as thinking with the brain, anger with the heart, and desire with the liver, the soul-atoms are diffused throughout the whole body. Their quantity is kept practically constant during life by the continual inbreathing of new particles which replace those that escape from the body. When the balance is upset and there is a slight deficit, we sleep until it is made up. If the deficit is more serious we swoon or pass into a coma. If the loss is total, the Atoms cannot reënter the body, and we die. Once passed out of the body the soul-particles are dispersed, and the soul as an individual atomic cluster or thing ceases to exist. The particular Atoms, however, which combine to form it are eternal and simply fall back into the great reservoir of soul-stuff with which the Universe is soaked like a sponge with water. But apparently it is only when they are lumped and associated with body-atoms that they feel and think as they quiver.

Greek orthodoxy laid little stress on an after life, and Democritus lived in a free-thinking atmosphere. Hence his

denial of immortality got him into no trouble. Nor does the denial of the power and the existence of the Gods, implied in his teachings, seem to have aroused any popular protest. This was due perhaps in part to the modest way in which the implications of his doctrine were veiled from the public gaze. Like all the other philosophers of the time he used religious language in speaking of the World-Stuff, and called it divine, applying the term particularly to the omnipresent soul or fire-atoms. And he explained the popular mythology as a personification of the natural phenomena or the moral ideals commonly associated with the different Gods in the popular imagination. Finally, in his opinion, the idea of the Gods and their appearance in dreams and the like could be satisfactorily explained only by assuming that there actually dwelt afar off in the air man-like beings, who, though made of Atoms and mortal like ourselves, were longer lived and more perfect and more powerful, and could affect us for good or ill. The mailed fist, then, of his mechanical theory was softened and concealed by this sympathetic, interested, and even apologetic way in which he handled established beliefs. Nevertheless, it is perhaps just as well that if he ever visited Athens at all he went incognito.

So far we have been considering an aspect of Democritus' system which looks towards the past, reviews, as it were, the succession of former thinkers back to the far horizon of Thales, and brings their conclusions into an all-including and final perspective. The atomic and mechanical theory as laid down by him and Leucippus gives a decisive answer to the two great questions which originate with the Milesians and have so far dominated the field of philosophic vision. It tells us what the world is made of, and describes the process by which it is formed, in language upon whose essential significance the mechanical theory to-day is unable to improve. From this point of vantage Democritus closes a chapter in the history of philosophy.

But Democritus also figures in the opening pages of a new epoch. There is another side to his philosophy faced towards problems of later origin, which had just become burning issues

and were destined to be of great importance in the immediate future. To this we now turn.

We may remember perhaps that, on the evening when Anaxagoras was pointed out to us in Aspasia's salon, our attention was also drawn to a group of philosophers whom our informant called Sophists and described as teachers of the art of successful speech-making in the Assembly and the Law-Courts. These men were convinced, for reasons which fall outside the scope of the present chapter, that philosophical speculation regarding the nature of Reality was futile, that the logical processes and the views of Truth of different individuals differed beyond hope of securing any universal agreement or authoritative standards, and that for similar reasons it was impossible to discover any absolute right or absolute wrong.

This agnostic denial of the possibility of knowing anything about Reality was all the more subtle an attack upon Democritus as he already half shared the Sophistic skepticism. In terms which recall the Eleatics, Empedocles, and Anaxagoras, he had bewailed the untrustworthiness of the senses and the difficulty of eliciting any true account of Reality from their reports. He had stigmatized sight, hearing, smell, taste, and touch, as "bastard" knowledge. All the wealth and complexity of experience which flowed in through them was, as Parmenides had said, but "names which mortals have given, believing them to be true." [115] Its vain sound and fury signified nothing in the real nature of the external world. Even such fundamental and primary qualities as the size, shape, weight, and movement in space of everyday objects gave us no clue to the forms and sizes, arrangements and motions, of the Atoms themselves.

In a word, the world of experience in which we live and move was in the same difficult and equivocal position in which Parmenides had left it. It was at loose ends. Its existence seemed meaningless and inexplicable. It wavered like Mohammed's coffin between heaven and earth, with no sufficient foothold in the outside Atoms or handhold on the soul Atoms within. And yet it was very difficult to see how we could ever know any other world than this. The senses, untrustworthy as they were,

[115] Fr. 11.

seemed our only points of contact with external Reality. But certainly they never saw, heard, tasted, smelled, or touched Atoms and the Void. How then did we come by the idea that such was the nature of Reality? And having come by it, what reason had we to trust the idea as true?

Democritus' problem was complicated and difficult. He had in the first place to anchor the floating world of everyday experience to the Atoms within and without. He had to explain perception in terms of his mechanical and atomic theory and show why and how the senses falsified Reality as they did. And then he must demonstrate the power of reason to see through the deception, and show, again in terms of his mechanical theory, how a direct contact of the mind with Reality was possible.

In developing his theory of sensation, he followed a hint already thrown out by Empedocles, that all objects are continually shedding their skins, as it were, and giving off particles of themselves. These effluences he defined more precisely as tiny combinations of Atoms which are faithful copies in miniature of the parent body. As they fly through the air they strike upon our sense-organs, through which they penetrate to the soul Atoms. The movements of the mind-stuff are affected by their impact, and sensation occurs. Thus it is that we are able to perceive objects at a distance without violating the mechanical law that all impression and influence must be by direct contact. Moreover, the damage suffered by the images from friction with the Atoms of the air and from collision with other images explains the distortion of size and shape, and the variations of sound, smell, and the like, to which objects perceived at a distance are subject. When the images finally do strike our bodies and enter through the sense-organs best fitted to receive them, their different degree of smoothness and roughness and the various sizes and shapes of their Atoms produce different vibrations in the soul, and give rise to the various colors, sounds, temperatures, tastes, smells, textures, and the like, which we attribute to the external world. As the sense-organs of any two men may differ, or even vary in the same person from moment to moment, similar images may

produce unlike sensations in different people, or in the same individual at different times. Hence the same colorless, tasteless cluster of Atoms may seem red to you, and, if I am color blind, grey-green to me, or, without any corresponding change in its atomic structure, may impress me as sweet at one moment and sour the next.

Democritus had now given an explanation of perception which anticipated all the essentials of our modern theory. He had identified it with movements of the soul Atoms, or, as we might say, of the nervous energy and molecules of brain substance, and had thrown it into gear with the external world by showing that similar movements of the mind-stuff could be produced only by the enmeshing of similar teeth, as it were, in the cogs of the outside mechanism. Hence each one of the so-called "bastard" qualities like a color, sound, or taste, though it might not resemble or recognize its parent, was in reality the legitimate offspring and the inseparable companion of some particular state and configuration of the Atoms without. In the same way, the modern physicist assures us that normally we see red only when between 450 and 475 billion ether waves, in themselves colorless, are striking each second upon the retina of the eye, or hear low *c* only when 128 air waves per second are breaking upon the ear.

But, for all this explanation, the problem of knowledge seemed as far from solution as ever. We now realized only too well that the heaven and earth upon whose changing splendors we looked were not the real outer world but a stained-glass window whose scenes were painted by the senses. We understood the composition of the paints and the craft of the artists. We saw how an external universe by beating upon the jeweled panes could kindle them into all the vain pomp and glory of the world which we perceived. The old doubt, however, still remained. What means had the mind of knowing what that mysterious outer world was like? We were born, lived, and died, immured behind those deceptive and never opened panes. How from the contemplation of even the sublimest of their painted scenes could we get any inkling of the sheer abyss of infinite emptiness and the cyclones of Atoms

storming down the Void, which lay just beyond the impenetrable thinness of the dream-tinted glass?

That we were thus enclosed beyond hope of escape, each one of us in the soap-bubble film of his own illusion, was the gist of the objection which the Sophists over in Athens were urging against philosophy in general, and Democritus had to meet it as best he could. He was as sure as Parmenides that reason was not at all in the same class as the senses, but was privileged somehow to see Reality face to face. The ideas which it formed were not mere "names." The Atoms and the Void were not like colors and tastes, existing, as the Sophists expressed it, by "convention"; they were facts.[116] But he saw that he could not merely assume this. He must defend and prove his belief.

To give a mechanical account of how knowledge takes place, and to show that reason is not wholly cloistered from Reality by the stained-glass window of the senses, Democritus did not find so difficult a task. The senses were not, he said, our only point of contact with the internal world. The whole body was literally alive with the sensitive soul Atoms, and its entire surface was bombarded with images by the external atomic clusters. The soul Atoms were exposed, therefore, not only to an indirect and ricochet fire penetrating through the sense-organs, but to direct hits. The images which missed such tortuous entrances as eye, ear, mouth, and nose, and landed and burst point-blank upon the mind could bring the truth straight home and leave the soul Atoms quaking with the knowledge of things as they really are. Knowledge, then, like sensation, was a movement of the mind-stuff caused mechanically by the immediate impact of external images. But the images which produced it had not already set up through the sense-organs the confusing vibrations of sight and sound and taste and smell. When they struck the reason they were still accurate copies of their great originals, the Atoms moving in the Void, and the responsive quivering of the mind under the blow was not mixed with secondary vibrations from the senses, and was therefore a true idea.

[116] Fr. 125.

Democritus' answer was far too simple to do justice to such a complicated and difficult problem. It failed to sound the real depth of the skepticism of the Sophists, who might have retorted by asking him how he could be sure that the picture of Atoms impressed by Reality upon his mind was truer than the quite different pictures of Numbers, or Fire, or the Eleatic Sphere, imprinted by it with equal logic and clearness upon the minds of the Pythagoreans, Heracleitus, and Parmenides. Again, the differentiation of the conscious from the material side of the Universe had not progressed far enough to permit him to realize the difficulties of regarding sensation and thought as the mere vibrations of material particles. The perception of red, for example, may always accompany a series of movements in the ether, the retina of the eye, the optic nerve, and the occipital lobes of the brain, and may never occur except when these physical processes are taking place. But for all that, redness is not an awareness of any of these things, nor does it suggest them. It is just itself—an immediate and unanalyzable sensation, having a quite different kind of existence from that of the atomic movements with which it is associated. Unconscious as he was of this difficulty, Democritus could not foresee the complications which were to be introduced into the problem of knowledge by the new problem of the relation of the mind to the body and to external objects.

Still, thanks to the stimulating agnosticism of the Sophists, he was the first constructive thinker to realize that we cannot take for granted our faith that there is only one Truth, the same for all men, and our confidence in the power of thought to attain and describe it. He saw that it is part of the business of a philosophic system to weigh the possibility and analyze the process of knowledge. Furthermore, he saw what Parmenides did not see, that even granting the possibility of knowledge, the fact of error still had to be explained. He asked what it meant to have a false opinion, and why and how false opinions could occur. The most incomplete and erroneous views regarding the nature of Reality were, he recognized, themselves part of Reality. And he did his best to picture to himself and to us the complicated atomic process which

explains how we perceive a seemingly real world, know it to be false, and recognize its true nature, all at the same time. From this time on, the problem and theory of knowledge were to play a leading part in the history of philosophy.

At another new point, also, philosophy was stung by the Sophists into action and systematic reflection. The spirit of skepticism was proclaiming the impossibility of knowing not only what is really true but also what is really right and wrong. Moral standards, it would seem, differed as much from person to person and time to time as did beliefs regarding the nature of Reality, and we could no more say that one standard was higher or better, than that one philosophy was truer, than another. In the one case as in the other, it was simply a question of the particular twist to one's brain and individual preference. Just, then, as philosophy had to rally to the defense of our belief in something which exists in itself and is true for all minds, so it had also to prop up our faith that there are some things which are universally right or wrong. Hitherto this faith, so far as it had become an object of reflection, had been expressed in wise saws and maxims founded, like our proverbs, upon practical experience or had been associated and colored with religious beliefs. In Heracleitus alone had anything approaching a theory of ethics appeared, and by him human conduct was regarded as primarily an interesting example of the conflict of opposites and the stress and strain between the Upward and the Downward Ways. But now the skeptical attack of the Sophists upon moral standards made necessary a thoroughgoing study of the behavior of human beings, to see whether after all there might not be discovered certain aims, and certain means and methods of realizing them, which could be regarded as common to all men alike.

So it is that we find Democritus including in his system not only a theory of knowledge but a theory of moral conduct. The fragments which have come down to us do not allow us to follow his ethics in any detail. They are sufficient, however, to reveal to us the general outlines of a way of thinking which later on will become familiar. The aim common to all men

alike is enjoyment. The disagreeable and painful are universally avoided.[117] Similarly all men agree, so far as means and methods are concerned, in considering things useful or harmful according as they conduce to enjoyment or the reverse.[118] But are all enjoyments equally good? No: the pleasures of sense are too shortlived, agitating, and productive of surfeit and pain, to compete with the enduring, calm, unchanging, and painless pleasure of the soul. The enjoyment which all men seek, so far as they know and are guided by their own best interests, is well-being and cheerfulness. But what are the foundations and conditions of a cheerful tranquillity? They do not lie in wealth or other outer circumstances, for fortune though sometimes lavish is a fickle jade. They are to be found rather in preserving an inner attitude of mind, in holding to the golden mean between excess and deficiency, in contemplating noble deeds, and in cultivating the resources of the soul. But in order to distinguish the better pleasures from the worse, discernment and wisdom are necessary. What we lay to hard luck is generally nothing but the result of ignorance.

The Sophists, Democritus might think, were now sufficiently answered. He had shown to his own satisfaction that all men had the same aim and universally judged conduct as good or bad according as it facilitated or impeded the attainment of the common goal. And one man could reasonably find fault with another if he felt and could show that his neighbor failed through ignorance to perceive in what the most enjoyable pleasures consisted, or what were the surest means and methods of enjoying them.

To sum up;—We find that in Leucippus and Democritus all previous reflection upon the nature of the World-Stuff and the formation of the Universe culminates in an atomic and mechanical theory which still has a great influence on modern science. The Eleatic discovery that matter is indestructible and unalterable, both in quantity and quality, is reaffirmed.

[117] Frs. 4, 189.

[118] Frs. 189, 191. *Cf.* Burnet, *Greek Philosophy, Thales to Plato*, pp. 200, 201.

And the work of Empedocles and Anaxagoras, in attempting a reconciliation of this view with the facts of change and motion which had so fascinated Heracleitus, is brought to a satisfactory conclusion. The One of Parmenides is broken up into Atoms which, unlike the four elements of Empedocles and the Anaxagorean particles, preserve the homogeneous transparency, uncolored by qualities, of the Eleatic Reality. These Atoms differ from one another only in size and shape. The differences of quality which Empedocles and Anaxagoras considered fundamental, are now relegated to a secondary position and are regarded as not in the external object at all, but as internal sensations accompanying disturbances in the sense-organs.

Motion is explained, not as a foreign property introduced among otherwise inert and motionless particles by an active outside agent like Love or Strife or Mind, but as naturally inherent in all Atoms because of their weight. The possibility of motion is due to the real existence of empty space or the Void, asserted in the face of Parmenides' identification of a vacuum with nothing (no thing) and his consequent denial that its existence is thinkable.

The Atoms, being heavy, naturally tend to fall perpendicularly through infinite space forever. The heavier naturally fall faster than the lighter and overtake them. The collision, recoil, and resulting whirling motion form everywhere throughout space vortices of Atoms which become entangled with one another and are massed into world systems. By a process, in describing which Democritus mainly reflects contemporary thought, our own system is evolved.

The whole World-Process is conceived as entirely mechanical and governed by efficient causation. Neither chance nor purpose nor Providence can interfere with the simple laws of collision, recoil, and motion, in accordance with which every object is formed and every event occurs.

Man is no less subject to these laws. Democritus, indeed, is enthusiastic over the adaptation of organic structure to environment, and neglects to give a mechanical description of evolution and explanation of apparent design such as Empedo-

cles offers. By this neglect he leaves his theory incomplete at an important point. But nowhere does he admit purpose as a cause.

The human soul like everything else is composed of Atoms, though of a finer and rounder sort. Perception and thought are movements of the soul-atoms. These movements are caused by the impact upon the body of miniature images or copies which every atomic cluster is continually shedding and spreading abroad. The images which strike the sense-organs cause the vibrations of such secondary qualities as color, sound, taste, etc. As these vibrations are within us they do not correspond to characteristics in the external objects, but are conditioned by the nature of our sense-organs. Hence they do not give us a true picture of the constituents of the external world, which, as we have already seen, has only such quantitative properties as size, shape, and weight. True knowledge is, however, possible since the images also strike upon the whole surface of the body which is everywhere alive with soul-atoms. The direct impact of the images upon the soul-atoms sets up vibrations which are not modified by the structure of the senses, and thus can present a picture of the Atoms as they really are.

This theory of knowledge is perhaps an attempt to answer the contemporary skepticism of the Sophists, who denied the existence of any universal truth and the possibility of knowing Reality. Similarly, the Sophistic doctrine that standards of right and wrong are relative and personal may have helped to inspire Democritus' ethics. In his theory of morals he seeks to show that enjoyment is an aim common to all men, that intellectual pleasure is universally preferable to sensual, and that the same means of attaining the end—discipline of the will and cultivation of the soul rather than the pursuit of wealth and other external goods—can be prescribed for all alike.

Of the fortunes of the School founded by Democritus we know next to nothing. History has preserved the names of a few disciples and some scattered references to their views. The most prominent members were Metrodorus of Chios and

Anaxarchus of Abdera. The latter was a friend of Alexander's and was famous in antiquity for the philosophic detachment and calm with which he met an unusual and painful death—he was pounded up in a mortar by an enemy into whose hands he had fallen. He was also the teacher of Pyrrho, the founder of an important skeptical revival which followed hard upon the close of the great constructive period of Plato and Aristotle.

This direct apostolic succession from Democritus to Pyrrho is symbolic of the general tendencies of the School of Abdera. The Democritan teachings, or at least such main features as their atomism and mechanicalism, were retained. But at the same time the skeptical admissions of Democritus' theory of sensation seem to have impressed his pupils more deeply than the theory of knowledge with which he sought to correct the defects of perception and combat the Sophists. Apparently both Metrodorus and Anaxarchus, in spite of their profession of the atomic theory, were betrayed into expressions regarding the possibility of knowing the nature of Reality which gained them a reputation for agnosticism among ancient commentators. Eventually the positive side of the Democritan teaching fell by the wayside and the skeptical tendencies of the school helped to inspire Pyrrhonism.

The positive teaching, however, was almost immediately raised and revived by a good—or it may be, a bad—Samaritan in the shape of Epicureanism. Philosophy had been profoundly affected by the political and moral chaos into which the world had been thrown by the sudden conquests of Alexander and the immediate disruption of his empire after his premature death. Its main interest had veered with the squall from the question of the nature of Reality to ethical problems of human happiness and conduct. Metaphysical speculations were simply borrowed ready-made from the past, to stage and sanction particular theories of morals. To the Epicureans human happiness lay in preserving the mind from pain and keeping it saturated with the maximum solution of pleasure. One of the greatest obstacles to this state of mental tranquillity was, they felt, the disturbing fear of an after-life, and of the prying eye and interfering hand of a God, fostered by

religion. A view, then, of Reality which should dispel these terrors and uncertainties was necessary to happiness—and such a view lay ready at hand in the Democritan teaching.

The relaxing, pleasure-laden Epicurean atmosphere through which it was transmitted to posterity gave a baleful glare to the light of the atomic theory. The teaching that the good was to be found in enjoyment, the denial of immortality, the rejection of a moral government of the world, and the disbelief in a divine Providence scandalized antiquity and admitted of no calm discussion of their possible truth. And any system, whatever its intrinsic merits might be, which was invoked disputatiously in support of such doctrines could not but suffer from its association with them. Thus Atomism was discredited not only philosophically by the temporary triumph of Aristotle's doctrine that things are caused by their purposes, but also morally by the disturbing ethical and religious guise in which it was presented by Epicureanism.

## CHAPTER VIII

## SUMMARY

We have now reached, and for that matter, somewhat overstepped, the bounds of the first epoch in the history of ancient philosophy. In dealing with Democritus we have, as we have seen, trespassed upon the times and upon some of the questions which belong to another era. We are, therefore, in a position to bring our discussion to a close by reviewing the main tendencies and achievements of the period with which we have been dealing.

The two principal problems of philosophy—the nature of Reality and the relation of ourselves and the world in which we live to Reality—were, we found, firmly grasped by the early philosophers who constituted the School of Miletus. They felt that the World was one, in spite of its multiplicity and variety, and they asked what this one was like. They guessed that beneath the ceaseless currents of time and change there was something permanent and they asked how this could be. They were driven, then, to search for the Stuff of which all things were really made, and for the process by which that Stuff transformed and diversified itself into all things.

To us, with all the subsequent history of philosophy in mind, it seemed frequently as if the thinkers of the period were interested primarily in the character and processes of physical nature and held a materialistic view of Reality. We reminded ourselves, however, that the antithesis now so sharply drawn between the physical and the mental, the mechanical and the moral, matter and form, data and laws, the concrete and the abstract did not exist for them. The world with which they dealt was, we saw, all of one cloth, shot through and through like a changeable silk with an iridescence of extension, solidity, energy, process, life, feeling, thought, and all the other subtle-

ties that lurk in the fabric of the World. First one, then another aspect might attract and hold the eye as the light of attention shifted. But there was as yet no well-defined suspicion that all this sheen and shimmer might be due to the interweaving of separate, and differently colored and constituted principles in the woof and warp of the World-Stuff. Even at the close of the epoch, when observation had become more detailed and speculation had begun to pick out the various aspects of Reality and hold them apart, the interest that inspired what we should call theories in astronomy or physics or biology or psychology, was not the restrained and specialized spirit of scientific investigation, but an insatiable curiosity to penetrate the mystery completely and reveal every secret of the whole nature of Reality. From the point of view, then, of the philosophers whom we have been discussing, we have dealt in the previous chapters not with speculations about the constitution of matter and the construction of the physical world, but with a true "metaphysical" theory of the "Absolute."

The evolution of fundamental philosophical problems went on with great rapidity. The Milesians had asked two great metaphysical questions. Their answers, which assumed the emergence of a multiple, varied, changing World from a single homogeneous World-Stuff, could not but set a still more profound and difficult problem. They bred inevitably the suspicion that an absolutely simple and single substance, like Water or the Indeterminate or Air, could not possibly turn itself into a multitude of things different both from one another and from the Stuff of which they were composed. If the oneness of Reality meant that it was completely homogeneous and undifferentiated, then it was difficult to see how the moving-picture show of the everyday world, with all its variety of color and incident, could possibly be real. Thus the question of how the Many proceeded from the One, was superseded by a doubt whether in any conceivable way a real, thoroughbred One could give rise to a real Many.

The problem of the One and the Many, of their existence, the sort of reality they possessed, and their relations to one

another, was henceforth to be a dominating problem both of ancient and modern philosophy. And the immediate reactions to it which we have been tracing in the past chapters practically exhaust the types of solution which have been offered by metaphysics.

The first-fruits of this maturing doubt were the widely-divergent systems of Heracleitus and Parmenides. Both men fell heir to the Milesian tradition of a single World-Stuff, and both were equally intent upon preserving the unity of Reality. But here the resemblance ended. Parmenides pushed the Milesian view of a strictly homogeneous World-Stuff to its logical conclusion, and accepted without flinching the consequence that the existence of multiplicity and of change was unthinkable. The crowded, gorgeous pageant of life which parades before our eyes could therefore be nothing but

> ". . . . a moving row
> Of magic, shadow shapes. . . .",

an illusion—a false opinion about the Nature of Things.

Heracleitus, however, was not content to dismiss the world of phenomena in this summary way. He was fascinated by the sparkling, shifting, restless character both of our inner life and the outer Universe, and he sought to redefine the One in a way which should preserve the unity, cohesion, and stability of Reality and at the same time permit variety and transformation to exist within it. For the unity of an invariable and homogeneous Substance, which was really always the same beneath the surface of apparent change and difference, he substituted the unity of an Activity or Process, the very essence of which was a continuous and unbroken transition from one new and different movement, phase, or event to another. Reality from this point of view was not a noun but a verb. Its Oneness and Identity were fed and maintained upon Difference and Multiplicity. If the Many ceased, the One would vanish too.

To this kind of unity and sameness, Heracleitus also added a unity of form. There was always the same order in the sequence of events. The rate, the direction, the volume, the

eddyings of the Flux, were, so to speak, constant, and could be expressed by a Law which held true for all time. The changeless fact and form of change which reason could behold continually exemplified in the torrent of events, he called the Logos.

In the system of Heracleitus we have the prototype of the philosophical theories which exalt the moving, living aspects of Reality and seek to explain in dynamic terms all that is static and fixed. We have already noted its affinity to Leibnitz's view that matter and mind have a least common denominator in Force, of which inanimate substance, life, and consciousness, are only different degrees. It suggests also the Bergsonian doctrine that everything seemingly hard and fast in the Universe, whether it be a hide-bound rule of logical thought, a rigid law of Nature, or a solid body, is nothing but a dead skin, as it were, sloughed off from the unwinding coils of a living, moving, pulsing Activity of Creative Evolution, whose true inwardness is most clearly revealed in the glow and forward flaming of our own inner life. Finally, Heracleitus has been claimed as a kind of premature neo-Hegelian, miraculously privileged to foresee the teaching that Reality, having like an individual an Idea of what it wants to do and be, lives out this Idea in the World-Process, whose unity and self-identity it enriches with an infinite wealth of change and novelty, difference and opposition, in order that it may leave no possible experience untasted, adventure untried, battle unfought, or opponent undefeated, in the working out of its Career.

The Heracleitan Logos also was, as we pointed out, premonitory of scarcely less important developments. It suggested that such things as Types and Laws might have a different kind of existence from that of material objects, and could even exist independently of the particular things which exemplified and obeyed them. This suggestion in Plato's hands became the famous doctrine of Ideas which attributed reality only to the General Forms, Types, Laws and the like, which reason was able to trace in the kaleidoscope of changing phenomena, and reduced the world of sense to fleeting and

distorted images of the Real mirrored confusedly in the flux of unreality. From his time on, the status of Ideas or Forms, the kind of existence they possess, and their relation both to matter and to mind, have been one of the most discussed problems of philosophy.

Parmenides' conclusion that the unity of Reality could not be so conceived as to include and explain variety and change, had no less far-reaching implications than the theory of Heracleitus. When the Eleatics maintained that only the thinkable could exist, and disallowed the evidence of the senses on the ground that it would not stand the test of logic, they pitted reason against the claims both of perception and immediate feeling, and outlined the case of Rationalism against both Empiricism and Mysticism. And yet, their inability to give a logical account of Reality in anything but negative terms almost brought them into the skeptic and the mystic ranks themselves. Finally, the sharp divergence of the Ways of Truth and Opinion led them abruptly to the brink of that Grand Canyon of metaphysics—the cleavage between Appearance and Reality—and, had they not been content to stop at the edge without attempting to explore the place of illusion in Reality and the significance and possibility of error, they would have been precipitated into a philosophic speculation to which no sure bottom has ever been found.

The positions, however, of both Heracleitus and the Eleatics did too much damage to "common sense" to be easily accepted. Heracleitus was perhaps too great as well as too obscure for his time. Philosophy stood heavily upon the solid and substantial aspects of Reality, and could not endure to feel the *terra firma* of the World-Stuff liquefy into Flux and slither away in ceaseless Change beneath its feet. But it could bear as little to be told that the steady and stately movement of solid bodies down the picturesque stream of time and transformation did not really take place but was all false opinion and optical illusion. Both the changing and the permanent, the liquid and the solid, the dynamic and the static aspects of the Universe seemed equally real. The business of philosophy was not to confute common sense but to corroborate it by

working out a theory which should retain the substantial character of Reality and yet leave room within it for movement and variety.

So it was that our last chapter was devoted to describing a development which seemed to aim at a reconciliation of the views of Parmenides and Heracleitus, or, we should perhaps be safer in saying, of the Eleatic teaching with the evidence of experience and the demands of common sense. The direction which this "safe and sane" path was to take, and the conclusions to which it led, had already been posted by the Pythagoreans in their doctrine that different things are simply different Numbers or sums of points or units. Parmenides' idea of Reality as a single rigid, continuous block was discarded, and the One was pulverized into many fragments. But there was no evading the Eleatic demonstration as set forth by Melissus that a really ultimate unit of existence, whatever its nature, must be as permanent and unalterable as the Parmenidean Sphere. Water might conceivably be divided into many drops, but each drop must be water and nothing else. So Reality might perhaps be a Many, but this Many must be only so many miniature Eleatic Ones. This difficulty was met, however, and the liquid character of the world was restored, by the argument that such units, although internally unchangeable, could be combined and arranged in various ways, and that all seeming differences and changes of their nature and quality could be explained as a mere difference and shifting of their number and arrangement.

Heracleitus and Parmenides, the Eleatics and common sense seemed, then, for the moment reconciled. The transient, flowing, active aspect of Reality, with its Process and Becoming and its apparent creation, transformation, and destruction, was not altogether illusion and false opinion. Beneath the surface of the Flux changes of order and number and external relation really took place. But since these changes involved no creation, alteration, or destruction of the World-Elements, Reality was still as uncreated, unalterable, and indestructible, and each of its units as simple and homogeneous, as the Parmenidean Sphere itself. In the systems in which this

method of dealing with Reality was developed we meet the first example both of the pluralistic type of philosophy, and of the materialistic and mechanical interpretation of the universe.

The solution offered by the Atomists, however, was only partial. Change and permanence, to be sure, could now co-exist in Reality without contradiction. But the relation of Appearance to Reality remained a riddle. The everyday world looked no more like Atoms than like Water or the Indeterminate. The flux of phenomena certainly seemed as little a mere monotonous reshuffling and redealing of the same old Many, as it did of the same old One. But why did the Many which we perceive, and the transformations which go on before our eyes, seem so different from the Many which really exist and the changes which really take place? If it was the fault of the senses, why did the senses falsify? And how could reason correct, or for that matter even suspect, the falsification? Questions like these were bound to crowd first upon one another's heels. The curtain went down upon Democritus already at grips with the formidable problems of knowledge and the possibility of error, which still stagger philosophy.

It may be convenient to sum up this development of early Greek philosophy by dividing it into "seven ages." First, there was the feeling that the diversified and disjointed phenomena of Nature were really One, and that all things were made of the same Thing. Second, there was a search for the One Thing of which all things were really made. Third, there was an attempt to explain the method and process by which many different things were made out of One Thing. Fourth, there arose a suspicion that the manufacture of many different things out of One and the same Thing was a self-contradictory and impossible process. This suspicion provoked, fifth, an attempt to conceive a World-Ground so fluid and volatile in nature that its unity, like the unity of a process or of a person's life and career, necessarily presupposed change, motion, novelty, and diversity. But it also provoked, sixth, the opposite conclusion that the unity and permanence of the

World-Ground rendered the multiplicity, variety, and change apparent in the world, non-existent and illusory. Seventh —and lastly—the extreme character of the two preceding views led to an attempt to reconcile the reality of multiplicity and motion with the permanent and substantial character of the Real, by grinding the World-Ground into many units, internally stable but capable of movement in space and of combination in different numbers and arrangements, and by reducing to terms of such movement and combination all the change and diversity of the World-Process.

The growth of the tree of philosophic speculation was, however, not all a spindling trunk. As it pushed upward along the lines we have just outlined, it was also branching out into more specialized interests and lines of investigation. The various aspects of Reality were slowly unfolding, and the limbs of the different sciences were taking shape. For example, the concept of Natural Law as something distinct from the phenomena which obeyed it was already in the subconsciousness of the Milesian School, and became almost explicit in the Heracleitan doctrine of the Logos or World-Order which steered all things and held them to their courses in the Flux. The antithesis of Form and Matter which was to assume such capital importance in the systems of Plato and Aristotle had appeared in the Pythagorean dualism with its opposition of the Limited to the Unlimited, and had been further developed by Heracleitus. The Pythagorean system had also imported from the Orphic Mysteries the no less significant antithesis of Body and Soul. And the doctrine of Number had laid the basis for the Atomism and Pluralism developed at the end of the epoch.

The subdivision of the expanding cell of general philosophic speculation into the fields of the special sciences also went on apace, although the interest which gave life to these new centers of growth remained universal and metaphysical, and never became restricted and one-sided. The first thinkers of the Milesian School had already shown a marked inclination for the study of what we should now call distinctly astronomical and biological phenomena, and these two aspects of Reality

continued to attract and hold the attention of the later philosophers. Anaximander taught a common origin and development of species from more primitive forms of life, and Empedocles later developed an evolutionary hypothesis along lines which anticipate the Darwinian theory. The Pythagoreans were not only bold astronomers, but founders of a great school of medicine, anatomy, and physiology, which numbered Empedocles among its pupils. Nor should we forget the astronomical and the biological speculations of Anaxagoras and Democritus.

To the Pythagoreans we also owe important discoveries in mathematics, and it was but recently that we were dwelling upon the profound and difficult questions raised by the Eleatic Zeno, which involved the theory of limits, and the nature of infinity and the continuum.

The nuclei of psychology and ethics could already be detected in the fragments of Heracleitus. In the systems of Empedocles, Anaxagoras, and Democritus, with their theories of sensation, and their speculations regarding the nature and seat of consciousness the special psychological field became fairly well marked. Democritus, again, devoted sufficient attention to the problem of human conduct and of the nature of the Good to develop ethics, if not into a separate science, at least into a distinct branch of philosophic investigation.

The Heracleitan doctrine of the Logos set reason and its operations over against the senses. Parmenides' insistence upon reason as the sole test of truth and existence, and the development of formal reasoning by his followers, brought logic into being. Furthermore, his discrediting of all the reports of the senses regarding the nature of Reality raised a number of difficulties which led in Democritus to a separate treatment of the problem of knowledge—in other words, to an epistemology.

Finally, towards the end of the epoch we found philosophy dealing mainly with aspects of Reality and with questions which we should now regard as the fundamental concepts and problems of physics. Matter was distinguished from space, and attempts were made to define the nature and relations of

the two newly disentangled principles. Motion also emerged as a distinct concept, and its origin and relation to matter were discussed. In the course of this discussion a mechanical view of causation and process was unconsciously developed by Empedocles and Anaxagoras and explicitly set forth by Democritus.

We may then take leave of our epoch, feeling that a cycle in the spiral of philosophical progress if, indeed, it be a spiral, has been completed. The great aspects of Reality upon which the different branches of philosophy and the special sciences are founded have been roughly distinguished. The fundamental problems of philosophy have been detected and the typical solutions proposed. Is Reality One or Many? Is it static or dynamic, a substance or a process? Can it be so conceived as to permit the real existence of the varied, changing world? Or does it logically reduce that world to illusion? And where is there room or explanation in Reality for illusion and mere appearance? Can Reality be perceived by the senses or even known by reason? How can reason detect and correct the falsity of the senses? Is the World-Process governed by purpose or by blind mechanical necessity? What is the nature of matter and space and motion? What kind of existence have laws and types and forms, and what is their relation to the particular phenomena and events which obey and exemplify them? What is the nature of consciousness? How is it related to matter? How is the human mind related to the human body? In what and how shall man find his happiness, and what is the real significance in Reality of the distinction which human beings make between good and evil?

Questions like these go far towards exhausting the repertoire of philosophic inquisitiveness, and before the end of our period they were all of them pressing with more or less insistence for an answer. Henceforth, reflection and speculation were to revolve in a circle whose circumference had been nearly closed. The horizons of the world were to expand and the means of observing and mapping the surface of Reality were to become more detailed and more precise as time went on.

Philosophy was to rise to points of wider outlook and flights of bolder fancy. Yet we may question at the end as we did at the beginning of our discussion, whether the thinkers of to-day possess any greater ability to give a philosophic interpretation of the world than did Thales.

So far, however, as ancient philosophy is concerned, the early Greek thinkers were really forerunners in the wilderness, preparing the way of the Lord. In the next cycle, the problems which they had set and the solutions which they had offered were to be reviewed by the genius of Plato and Aristotle. Philosophy was about to keep its head at an altitude which it has never again attained, and to look steadily and discerningly into depths, of which all subsequent vision, it might be argued, has been more dizzy than profound. But the heights of this impending survey of all time and existence lie beyond the scope of the present volume.

# APPENDIX

# I. CHRONOLOGICAL TABLE[1]

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| 3000—1100 B. C. | Era of Cretan-Ægean culture and civilization. Rise and fall of the great Minoan Empire, which, from its capital at Cnossus in Crete, dominated the islands and shores of the southern Ægean and implanted the so-called "Mycenæan" culture—testified to by the treasure and ruins of "golden" Mycenæ and Tiryns—in Greece itself. |
| Circ. 1500. | Height of the splendor and power of the Minoan Empire. |
| 1500—1300. | Mycenæan civilization on the Greek mainland at its zenith. |
| Circ. 1400. | The Minoan Empire overtaken by a sudden and mysterious catastrophe—possibly a Mycenæan invasion from the Greek mainland. The great palace at Cnossus burnt. Collapse of the Cretan domination. |
| 1100—950. | The Great Migrations. "Dorian" tribes, displaced by an invasion of the Thessalians from northern Epirus, pressed southwards, occupying Bœotia and Corinth, threatening Athens, and even overrunning Crete. The original inhabitants, representative of Minoan-Mycenæan civilization, either were reduced to an inferior condition or migrated to the coast of Asia Minor. Here they were followed by an afterwash of the Dorian inundation. The mixture of the two peoples produced the Ionians, who developed a brilliant Hellenic civilization in Asia Minor and built up many rich and powerful cities, among which Miletus, Ephesus, Colo- |

[1] The historical portion of the table is based for the most part on *Chronos, a Handbook of Comparative Chronology,* by R. J. Hart, 1912.

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| | phon, and Clazomenæ were later of particular philosophic interest. |
| Circ. 940—850. | Homer. The Iliad and the Odyssey. |
| Circ. 850—800. | Hesiod. Works and Days. The Theogony. |
| Circ. 820. | Sparta politically stabilized by the legislation of Lycurgus. |
| Circ. 776. | The first celebration of the Pan-Hellenic Games at Olympia, the date of which was exactly determined. All subsequent Greek history was reckoned in terms, known as Olympiads, of the successive celebrations of these games, which took place every four years. |
| Circ. 750—730. | Beginning of the colonization of Southern Italy and Sicily, or "Magna Græcia," by the Greeks. Foundation of Croton, Tarentum, Rhegium, Syracuse, Leontini, etc. |
| 743—723. | Era of political disorder in most of the Greek town of Messenia, resulting in the collapse of Messenia, and the aggrandizement of Sparta. |
| 700—600. | Era of political disorder in most of the Greek states. Rise of tyrants and oligarchies. Growth and prosperity of the Ionian cities in Asia Minor. Sparta the leading city in Greece. Archaic period in art. Age of the elegiac and iambic poets, Callinus, Tyrtæus, Alcman, Simonides, of Amorgas, Mimnermus, Stesichorus (Sicily), Sappho, Alcæus. Era of growing self-consciousness and self-examination, and mental and moral unrest. |
| 660—610. | Growth of the Lydian Kingdom in Asia Minor. Continuous attacks upon the Ionian cities. Some of them were subjugated by the Lydians, but Miletus, Ephesus, and Clazomenæ, among others, held out, and Miletus entered into an alliance with the Lydians in which her independence was recognized. |
| 645. | Second war between Sparta and Messenia, resulting in the Spartan conquest of the Southern Peloponnesus. |

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| 625. | Periander tyrant of Corinth. Height of Corinthian power and splendor. |
| Circ. 610. | *The philosopher Anaximander born at Miletus.* |
| Circ. 600. | *Thales, the first Greek philosopher, at his prime at Miletus.* |
| 600—500. | *The Milesian School of Philosophy, Thales, Anaximander, and Anaximenes.* Also era of the "Seven Sages," of whom Thales was accounted one. Period of great intellectual ferment, and moral and religious reform and revival. Progress in art and architecture. The "culture-mad" tyrants and their brilliant courts. An epoch akin to the Renaissance and the Elizabethan Age. |
| 594. | The constitutional reforms of Solon at Athens. |
| Circ. 570—565. | *The philosopher Xenophanes born at Colophon in Asia Minor.* |
| 568—546. | Height of the Lydian power in Asia Minor under Crœsus. Miletus, Ephesus, and other Ionian cities were subdued by him and acknowledged his overlordship. |
| 560—511. | Tyranny, at Athens, of Peisistratus and his sons Hippias and Hipparchus (the Peisistratidæ). Art, literature, and religion patronized by Peisistratus. The Panathenæa, a festival in honor of Athene, founded. The festivals of Dionysus and the Eleusinian Mysteries favored and made more important. The Orphic Mysteries introduced into Athens by Onomacritus and "taken up" by the tyrant. Beginnings of tragic poetry. Athens improved and beautified. An era of considerable brilliance at Athens. |
| 546. | Conquest of Lydia by the Persian King, Cyrus. Fall of Crœsus. The Ionian cities, with the exception of Miletus, who transferred her alliance and allegiance from Lydia to Persia, made an armed resistance, but were quickly subdued. *Fugitives from the captured towns of Teos and Phocæa founded respectively Abdera in Thrace,* |

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| | *the native town of the philosophers Democritus and Protagoras, and Elea in southern Italy, the birthplace of the philosophers Parmenides and Zeno (and possibly also of Leucippus), from which the Eleatic School took its name.* |
| Circ. 532. | *The philosopher Pythagoras emigrated from Samos to Croton in southern Italy, where he founded the Pythagorean brotherhood.* |
| 525. | The poet Æschylus born at Eleusis in Attica. |
| Circ. 522. | The poet Pindar born at Thebes (or Cynoscephalæ, in Theban territory). |
| 521. | The poet Anacreon at his prime. |
| 511. | Revolt, at Athens, of Cleisthenes, and fall of the Peisistratidæ. End of the tyranny at Athens. The code of Solon reformed, and the democratic constitution of Cleisthenes drawn up and put in force. |
| Circ. 510. | *Growing dissatisfaction in southern Italy with the theocratic rule of the Pythagorean Brotherhood. Flight of Pythagoras from Croton to Metapontum in southern Italy.* |
| Circ. 500. | *Death of Pythagoras at Metapontum.* |
| 499—494. | The revolt of the Ionian cities against Persia. The Ionians, assisted by Athens, were at first successful, and captured and burned Sardis, the old Lydian capital. But the tide soon turned, and the Greeks were badly defeated near Ephesus. The Athenians then abandoned the enterprise, and returned home, having incurred the wrath of the Persian King, Darius, and sown the seeds of the Persian attack on Greece. The revolt, however, spread, and was not stamped out by the Persians for nearly six years. |
| Circ. 497 | *The philosopher Anaxagoras born at Clazomenæ in Asia Minor.* |
| 495. | The poet Sophocles born at Colonus near Athens. |

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| 494. | Fall of Miletus and final extinction of the Ionian revolt by the Persians. *End of the Milesian School. The philosopher, Anaximenes, possibly still alive.* |
| 493. | First Persian Expedition against Athens in revenge for the Athenian participation in the Ionian revolt and the sack of Sardis. Abortive, however, because of the destruction by a storm of the Persian fleet. |
| 490. | Second Persian Expedition. The Persians advanced as far as Marathon, where they were signally defeated. |
| Circ. 490. | *The philosopher Empedocles born at Acragas (Agrigentum) in Sicily.* |
| Circ. 490? | *The philosopher Leucippus born at Miletus? or Elea?* |
| Circ. 490. | *The philosopher Heracleitus in his prime at Ephesus in Asia Minor.* |
| Circ. 490. | *The Philosopher Zeno, a pupil of Parmenides, born at Elea in southern Italy.* |
| 490—480. | Growth of the power of Athens. Banishment of the statesman, Aristides. Athenian policy in the hands of Themistocles. Building of the fleet. A congress held to decide on steps for coping with a new, threatened Persian invasion. |
| Circ. 483. | *The philosopher Gorgias born at Leontini in Sicily.* |
| Circ. 481?[1] | *The philosopher Protagoras born at Abdera in Thrace.* |
| 481. | The historian Herodotus born at Halicarnassus in Asia Minor. |
| 480. | The poet Euripides born at Salamis. |
| Circ. 480—475 | *The philosopher Parmenides at his prime in Elea in southern Italy.* |

1 The birth of Protagoras, however, is placed as early as 500 B. C. by Professor Burnet. *Cf. Greek Philosophy,* pp. 111-112.

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| 480. | Third Persian invasion of Greece, under Xerxes. The battle of Thermopylæ. Advance of the Persians to Athens. Defeat of the Persian fleet by the Athenians at Salamis, and subsequent retreat of the Persian armies. |
| 480. | Defeat by Syracuse and Acragas at the battle of Himera of a Carthaginian attack on Sicily. |
| 478. | Athens now the most powerful state in Greece. Defensive alliance against Persia of the islands of the Ægean under the hegemony of Athens, known as the Confederacy of Delos. |
| Circ. 478. | *The philosopher Xenophanes still alive in Sicily at the court of the tyrant Hiero of Syracuse.* |
| 471. | The historian Thucydides born at Athens. |
| 471—469. | *The philosopher Socrates born at Athens.* |
| Circ. 470. | *The philosopher Melissus born at Samos.* Struggle for power between the rival statesmen |
| 468—461. | Cimon and Pericles at Athens, ending in the banishment of Cimon and the ascendency of Pericles. |
| 462. | *The philosopher Anaxagoras called to Athens by Pericles.* |
| 461—431. | Transformation by Pericles of the Confederacy of Delos into the Athenian Empire. Extension of the Empire. Growth of commerce and wealth. Athens at the zenith of her power and brilliancy. The Periclean Age and Circle. A "Golden Age" of art and literature, adorned by the poets Sophocles and Euripides; the historians Herodotus and Thucydides; the philosophers Anaxagoras, Protagoras, and the youthful Socrates; the painters Polygnotus and Parnænus; the sculptors Myron, Phidias, Pæonius, and Polyclitus; and Mnesicles and Ictinus, the architects of the Parthenon and the Propylæa. The "long walls" connecting Athens with the Peiræus built. |
| Circ. 460. | *The philosopher Democritus, the pupil of Leucippus, born at Abdera in Thrace.* |

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| 456. | The poet Æschylus died at Gela in Sicily. |
| Circ. 454. | Removal of the treasury of the Delian League from Delos to Athens. This an important step in converting the League into an Empire. |
| Circ. 450. | *Final uprising in the southern Italian cities against the Pythagorean Theocracy. The lodges of the Brotherhood were burnt, the members massacred, and the survivors fled for their lives, many of them to Thebes and elsewhere in Greece.* |
| Circ. 449? | *Visit of the philosophers Parmenides and Zeno to Athens. Interview with the youthful Socrates.* |
| Circ. 448. | The poet Aristophanes born at Athens. |
| Circ. 444. | *The philosopher Empedocles, in his prime, visited Thurii, where he probably met Protagoras and Herodotus.* |
| 443. | The historian Thucydides, a political opponent of Pericles, banished, leaving Pericles supreme. The subject-allies of the Confederacy now frankly taxed for Athenian purposes. |
| 440. | *Incidental to an unsuccessful attempt of the island of Samos to secede from the Athenian Empire, the Athenian naval forces were defeated by the Samian fleet commanded by Admiral the philosopher Melissus of the Eleatic School.* |
| 432. | *The philosopher Anaxagoras tried at Athens for materialistic views regarding the nature of the sun and the moon. Thrown into prison, he escaped and fled to Lampsacus on the Hellespont, where he died soon afterwards, highly respected and honored by his new, more liberal fellow-townsmen.* |
| 431. | Outbreak of the long-drawn-out Peloponnesian War, between Athens and Sparta. The popularity of Pericles already on the wane. |

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| Circ. 430. | *The philosopher Empedocles died; place unknown, but probably not in Sicily.* |
| 429. | The Plague in Athens. Death of Pericles. |
| 427. | *The philosopher Plato born at Athens.* |
| 427. | *Advent at Athens of the philosopher Gorgias, at the head of an embassy from Leontini and her allies to ask for help against Syracuse.* |
| 421—416. | Truce between Athens and Sparta. Political ascendency of Alcibiades, the pupil and friend of Socrates. |
| 415. | Launching by Athens of the great "Sicilian Expedition" against Syracuse; the war with Sparta also having been renewed. |
| 413. | Terrible and decisive defeat of the Athenians at Syracuse. Revolt of Chios, Lesbos, and Miletus against Athenian domination. Beginning of the break-up of the Athenian Empire and of the decline of Athenian power. |
| Circ. 411?[1] | *Protagoras tried for impiety and exiled from Athens. Shipwrecked and drowned en route for Sicily.* |
| 409—404. | Great Carthaginian expedition against Sicily. Initial success. Himera, Selinus, and Acragas destroyed. The democratic constitution of Syracuse abandoned and Dionysius made tyrant. Carthaginian advance against Syracuse. |
| 406. | The poet Euripides died in Macedonia. |
| 405. | The Athenian fleet beaten and destroyed by the Spartans under Lysander at Ægospotami. |
| 404. | End of the Peloponnesian War. Surrender of Athens. Razing of the Long Walls and destruction of the fortifications. Athens reduced to a subject-ally of Sparta. Sparta now the dominant power in Greece. |

[1] The story of Protagoras' trial and exile is rejected by Professor Burnet, who places the date of his death in the early years of the Peloponnesian War. *Cf. Greek Philosophy*, pp. 111-112.

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| **404.** | Conclusion of peace between Carthage and Syracuse, by which the Carthaginians retained considerable territory and influence in Sicily. |
| **404.** | The poet Sophocles died at Athens. |
| **404—403.** | Establishment of an oligarchy at Athens. The Thirty Tyrants. Reign of Terror. |
| **403.** | Overthrow of the oligarchy and reëstablishment of the democracy at Athens. |
| **399.** | *Trial and execution at Athens of Socrates on charges of impiety and corruption of the youth by his teachings.* |

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